

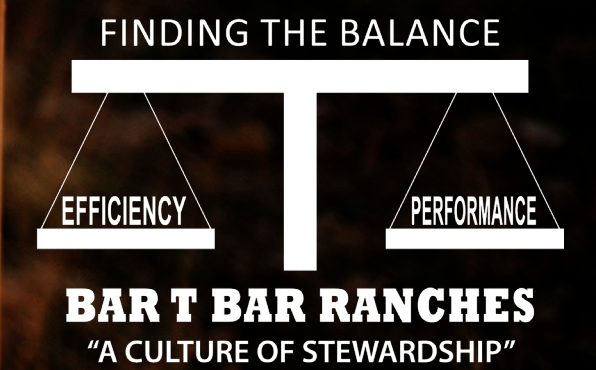
Viasat™
+ Inmarsat

REMOTE WATER MONITORING AND MANAGEMENT



ISATDATA PRO CASE STUDY

Ranchbot enabled by Viasat + Inmarsat offers satellite-enabled, remote water monitoring systems for the Bar T Bar ranch in Winslow, Arizona



SATELLITE IOT OPTIMIZES WATER DELIVERY TO ARIZONA CATTLE RANCH

INTRODUCTION

Ranchbot is a provider of satellite-enabled remote water monitoring solutions, on a mission to help solve water management issues in ranches across the United States. Most recently, Bar T Bar, a cattle ranch in Winslow, Arizona, has adopted the solution to help manage and monitor water resources – its operational lifeline. Ranchbot is the American arm of Australian company, Farmbot, which has become the most popular water monitoring and control solution for ranches in Australia. Ranchbot is rapidly growing in the southwestern United States. Enabled by Viasat + Inmarsat's IsatDataPro (IDP) satellite technology, the solution works nearly anywhere there is a ranch globally.

THE CHALLENGE

Water is the backbone for sustainable agriculture. In the semi-arid state of Arizona, 72% of its water is used for agriculture. With around 80% of the southwestern United States experiencing drought conditions the past couple of years, water management has never been so important.

Efficient water use is paramount to the ranchers at Bar T Bar. As home to over 1,200 head of cattle spread across 300,000 acres (460 square miles), the ranchers are under constant pressure to monitor water use. Managing this scarce resource helps ensure the survival of both animals and feed crops. As with most ranchers, they struggled to balance the costs of labor, fuel, and time to oversee their numerous water storage tanks and pumps. In an area with extremely patchy

cellular coverage, Bar T Bar experimented with a bespoke radio system to monitor water levels, with mixed success.

Bar T Bar is not alone: like many other ranches in the United States, water tanks are often located miles away from the point of operation. This means ranchers spend a considerable amount of time traveling back and forth to check water levels and to ensure pumps are running smoothly. This is a considerable time drain and in certain situations, it can mean they arrive too late to mitigate urgent issues such as damaged pipes or over- and under-use. The impact of not acting quickly enough can lead to reductions in yields or even loss of livestock.

A new solution was needed at Bar T Bar to monitor water tanks more efficiently, reduce water waste and improve resource management.



AN APP THAT MONITORS WATER LEVELS AND CONTROLS MACHINERY

THE SOLUTION

Ranchbot's Ranch Management Tool solution was a clear choice to address Bar T Bar's challenges.

Ranchbot provides an innovative satellite solution that allows ranchers to remotely manage their entire water system.

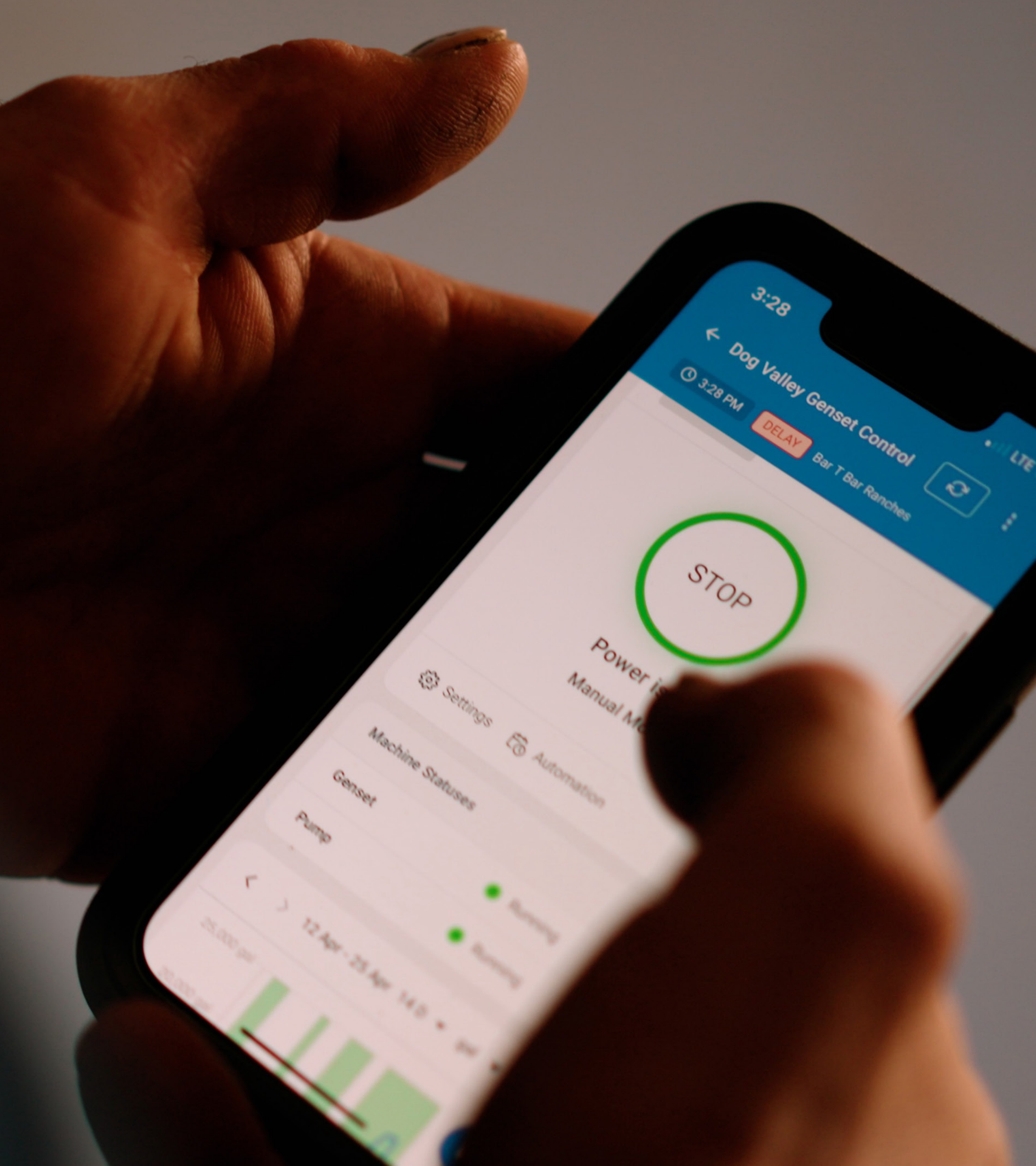
Through an application on their mobile device, they can readily monitor water levels and control machinery, such as pumps to change levels remotely, without having to travel to each site. Viasat + Inmarsat deliver the satellite connectivity that supports Ranchbot's two-way communications - enabling near real-time visibility of Bar T Bar's water assets and infrastructure on the ranch.

Ranchbot offers a variety of edge units that sit in the field. All are supported by Viasat + Inmarsat's IsatData Pro (IDP) satellite service, which is built in, meaning

the units work anywhere across the globe. The Ranchbot Water Level Sensor, for example, is a solar-powered device connected to Bar T Bar's water tanks, monitoring water levels around the clock. Additionally, Ranchbot offers a camera device which enables ranchers to monitor cattle and infrastructure around water reservoirs. The rugged, small-form factor of the technology means it is durable in even the most challenging environmental conditions.

All of the Ranchbot solutions are enabled by the IDP service which runs on the ultra-reliable ELERA L-band network, offering 99.9% availability. Satellite connectivity provides an invaluable alternative to unreliable terrestrial connectivity - meaning the ranchers can utilize the Ranchbot Water Level Sensors in the most remote locations, which sometimes have limited accessibility.

Neither does the Ranchbot solution require a technician to install it - meaning Bar T Bar was able to kick-start its remote monitoring journey with ease. The Ranchbot device on Bar T Bar's water tanks connects to the MyRanchbot platform. This user-friendly platform is accessible on mobile smart devices to generate real-time alerts and provide trends analysis on Bar T Bar's water ecosystems.



GIVING RANCHERS INVALUABLE INSIGHT

THE RESULT

Through the adoption of the Ranchbot water management system, Bar T Bar benefits from the data generated by the company's satellite IoT-enabled Water Level Monitors, Rain Gauge, and Pump Controls (which enable remote control of generators and wells.)

Through the MyRanchbot application, the Bar T Bar team is able to view and monitor all water tanks through its 'Map View' format - which illustrates water tank levels across the ranch. This provides an invaluable insight for ranchers, allowing them to identify if any may need attention.

The platform also enables ranchers to remotely conduct health checks on individual tanks around the clock, demonstrating how water is tracking in real-time and over certain time periods through capacity, trends, and graphs. This ensures the team are equipped with the understanding of how much water is used in pastures, and how much cattle are consuming. It has also alerted the team of potential leaks - preventing significant water wastage and subsequent impact on livestock.

The introduction of a rain gauge has also helped the team record precipitation meaning they can make informed stocking decisions and manage dependency on rainwater. The

tool also provides valuable foresight for Bar T Bar as they can analyze past issues, such as periods of reduced rainfall, and predict patterns for the future - averting business critical problems.

Bar T Bar ranch hand Devin Hovey said, "Although we wouldn't exactly call ourselves 'space cowboys', we are aware of the power that Viasat + Inmarsat's resilient satellite connectivity has given our operations. The two-way nature of Ranchbot's solution, allowing us to monitor and control our assets from our phones is a game changer. And while some other solutions allow you to monitor, no other ones on the market allow you to control your machinery remotely."

BOB PROSSER, OWNER OF THE BART BAR, SAID,

"Introducing Ranchbot's solutions has been a game-changer to not only the way we operate, but our working lives. It has given us the benefit of time. As an extra set of eyes, it allows for invaluable oversight and actionable insights, without even needing to visit the water tanks. Not only does this save money on fuel and the wear and tear of our vehicles, it also gives us more time to prioritize other areas on the ranch and get home to our families on time.

"We'd recommend any ranch in the United States that has water storage speak to Ranchbot," Prosser said "Ranchbot is a huge opportunity at a very reasonable cost that has improved our operations considerably - and can do the same for others experiencing the same challenges we were."





HOW TO BUY

To learn more about Ranchbot monitoring solutions visit: <https://ranch-bot.com/>

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