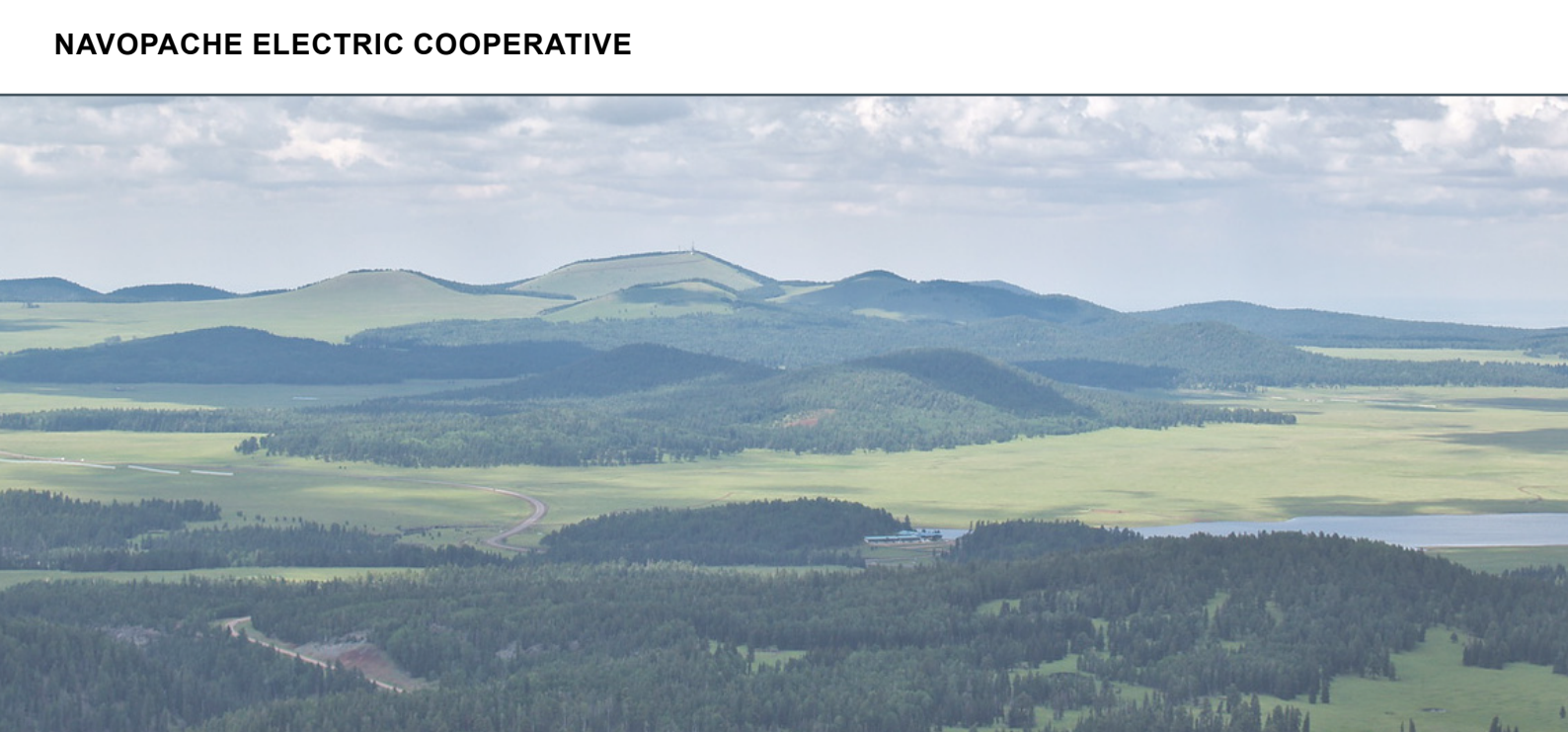


## Consolidating AMI Backhaul & SCADA in one high capacity network

Navopache Electric Cooperative  
Eastern Arizona & Southwestern New Mexico, USA



Requiring a new communications solution to support and consolidate an AMI upgrade with their SCADA control, Navopache Electric Cooperative engaged Mimomax to supply a high capacity network in locations without a microwave backbone in their New Mexico and Arizona service area.

## CHALLENGE

With their existing AMI backhaul nearing end-of-life, Navopache Electric was looking for a vendor who could provide a private communications solution in 700MHz. The new network would need to offer the bandwidth required to be able to manage both the AMI backhaul and mission critical SCADA communications simultaneously.

Furthermore, the solution would need to be designed to not only ensure Navopache Electric's frequencies did not interfere with the adjacent spectrum owned by Salt River Project but to also be able to maintain high availability despite the challenges of mountainous terrain and tree cover.

## SOLUTION

Navopache Electric selected Mimomax to provide a point-to-multipoint network based on the Tornado radio. The solution was designed to provide reliable ethernet connectivity plus backhaul from both AMI collectors and their upgraded SCADA controllers.

One of the key priorities for Navopache Electric was to be able to prioritize serial traffic over Ethernet to ensure the availability of the SCADA network. A past situation

where a firmware upgrade was sent to several downstream devices over the Ethernet had caused the serial traffic to stop thereby disabling the organization's SCADA network. Prior to deployment, the utility ran a series of robust lab tests to ensure the ethernet ports could handle the level of SCADA traffic they were expecting.



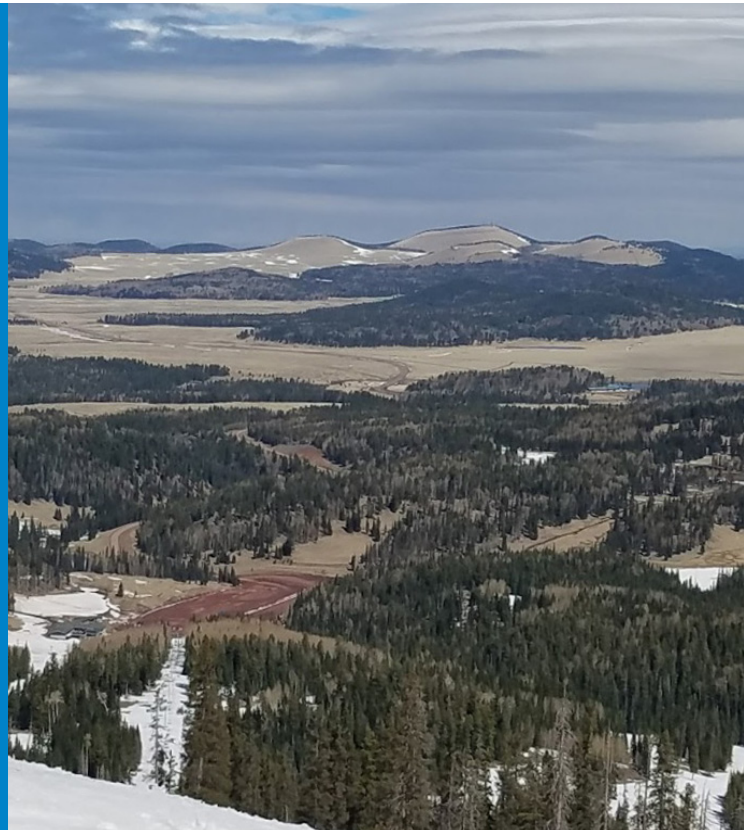
“Throughout this project, every member of the Mimomax team has been vastly knowledgeable about the products and always eager to answer any questions or help solve individual issues. The result is that they have ensured that Navopache Electric is getting exactly what we need out of their radios.”

**JEREMYHELLMAN** | COMMUNICATION ELECTRONICS TECHNICIAN - NAVOPACHE ELECTRIC COOPERATIVE

## RESULTS

Utilizing in-house expertise in network engineering and coverage design, the Mimomax team was able to mitigate both cross boundary and self-interference for Navopache Electric. Combining this detailed design and testing with the in-built internal duplexers and sophisticated filtering of the Tornado radio resulted in superior performance for the whole network.

The high throughput rates and full duplex communications offered by the Tornado radio also allowed Navopache Electric to maintain their SCADA traffic without interruption. “We’ve done tests with the Mimomax radios where we have bombarded the Ethernet ports with traffic and have never seen even the smallest hiccup in the serial transmissions,” said Jeremy Hellman, Communication Electronics Technician at Navopache Electric Cooperative.



## KEY BENEFITS

- Solution equipped to cope with harsh environmental conditions
- Ability to prioritize serial traffic to ensure the availability of SCADA network
- Private, secure network for AMI backhaul
- Detailed coverage design and integrated filtering to mitigate interference from adjacent bands

## ABOUT NAVOPACHE ELECTRIC COOPERATIVE

**Location:** Eastern Arizona & Southwestern New Mexico

**Industry:** Electric utility

**Services:** Established in 1946, Navopache Electric has continually expanded from a few miles of power lines to now providing electricity to over 25,000 homes and businesses across a service area totaling almost 10,000 square miles.



#### About Mimomax

Mimomax develops wireless communications solutions for narrowband channels which enhance visibility and control - right to the edge of our customer's networks.

Our award-winning radios utilize Multiple Input, Multiple Output (MIMO) technology combined with full duplex communications and ultra-low latency to provide our customers with communications solutions which optimize data throughput and provide rapid feedback and control of their mission-critical assets.

Winner of the 2018 UTC IMPACT Award for Mimomax Tornado Radio.

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