FROM FRAGMENTED TO CONNECTED
SOLANO COUNTY'S INTEROPERABILITY BREAKTHROUGH

Background and challenges

In the aftermath of 9/11, Solano County, California, confronted the hard truth that its emergency agencies—fire, police, sheriffs, and public works—were operating in silos. With each department on different frequency bands and using a mix of equipment, coordination during multi-agency incidents was fragmented and unreliable.

To fix this, the County formed the Solano Emergency Communications Activity (SECA) group, tasked with building a unified radio system. But the road wasn't easy. An initial attempt using proprietary technology failed before it launched, and tight budgets made large-scale infrastructure replacement impossible. Coverage gaps in remote and high-risk zones added another layer of complexity.

The breakthrough came when the team recognised that Simoco's technology, initially purchased for a narrow function, could actually serve as the backbone of the entire interoperable system. By leveraging existing assets and deploying Simoco's IP-based simulcast architecture, the County was finally able to realise its vision.

Solution

Solano County adopted Simoco's Solar 2 Traffic Manager and Network Interface units, building a distributed simulcast network that integrated seamlessly with existing repeater equipment. This approach allowed the County to implement a nine-site, 19-channel system that now supports all public safety and emergency services across the region.

Agencies can now join shared SECA channels regardless of their original frequency band. During major events, officers, fire crews, and dispatchers simply select the designated SECA channel on their radios and immediately begin coordinated communication.

The system not only enabled full interoperability but also allowed for mobile deployment during incidents. With the ability to create a temporary simulcast site using a mobile hotspot, responders were able to extend coverage on the fly during the Wragg Fire, facilitating the evacuation of residents and livestock from rugged terrain.

These are some of the challenges Solano County faced:

Disparate systems across agencies
Emergency agencies were operating on different systems and operating bands Without a shared communication platform, coordination during joint operations was unreliable and time-consuming.

Failed initial implementation
The County's first attempt at deploying a proprietary interoperability solution resulted in a system that never became operational. This false start eroded confidence and left stakeholders searching for a solution that would truly deliver.

Budget constraints
With limited grant funding, the County needed a scalable, high-performance solution that didn't rely on costly new infrastructure or replacing all user radios.

Coverage gaps in critical areas
Remote and high-risk areas, including regions near a major air force base, experienced poor signal coverage, that compromised emergency response.

Secure. Reliable. Adaptive.

Key aspects influencing the decision to choose Simoco

Simoco offered Solano County the flexibility, reliability, and intelligence they were looking for in a communications partner. By delivering a fully IP-based simulcast system, Simoco enabled the County to unify its diverse agencies without demanding costly upgrades to infrastructure or end-user equipment. Their technology integrated effortlessly with existing assets, bringing legacy and modern systems together under one architecture. Most importantly, Simoco's approach gave the County full control and scalability—so they could expand and adapt their network without starting over every time their needs changed.

True IP-based simulcast
Simoco's distributed simulcast architecture operates entirely over IP networks, which eliminates reliance on central timing sources and allows components to be placed anywhere. This provided Solano County with unmatched deployment flexibility and resilience.

Multi-band interoperability
The system supports communication across VHF, UHF, 700MHz, and 800MHz frequencies. Agencies with legacy analog systems can talk seamlessly with those on modern digital platforms, solving the challenge of mutual aid communication during high-pressure incidents.

Rapid mobile deployment
During field operations or emergencies, mobile simulcast sites can be activated using a basic hotspot, no additional infrastructure required. This proved essential during wildfire evacuations where rugged terrain would have otherwise blocked communication.

Low-cost scalability
Each new site requires only a Simoco Solar 2 Network Interface and compatible RF equipment. This simplicity and cost-efficiency allow the County to continue expanding the system without financial strain, ensuring longevity and future readiness.

"We needed to solve our interoperability problem without having to spend tens of millions of dollars on new infrastructure and subscriber units. Using Simoco's simulcast solution, we were able to utilise our existing radio repeaters to build an inexpensive and effective interoperability solution. We were really able to maximise the slim grant funds available to us."

Ross Cardno
Communications Supervisor, Solano County

Result

Solano County now operates a fully interoperable, multi-agency radio system that covers the entire region and continues to grow. The transition to Simoco's IP-based simulcast platform allowed the County to sidestep the need for massive infrastructure overhauls while achieving reliable, wide-area coverage. During mutual aid events—whether responding to natural disasters, managing a major incident at the local air force base, or coordinating routine multi-jurisdiction operations—the County's emergency services can now communicate instantly and effectively. The ease of expansion ensures that the network remains responsive to evolving public safety demands, all without breaking the budget.

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