



RoGO Overview

RoGO Snapshot

www.rogocom.com

RoGO Communications provides an advanced satellite integrated communication platform to track location and movement of wildland firefighting crews and equipment in remote areas where cellular service is often not available.

Information typically only at incident command pushed to firefighter crews

- Immediate tactical coordination
- Lifesaving situational awareness
- Weather conditions influencing fire

Customers – RoGO satellite-based products and services operate anywhere in the world and support firefighting through channel partners and field trials across local, state and federal agencies in the Western United States

RoGO DropBlocks

Small, lightweight, portable, ruggedized satellite-enabled devices that track GPS location for firefighter crews and equipment.

Weather data influencing the fire supports better situational awareness and strategy to quickly quell the fire and save lives.

Novel Innovation Breakthroughs

- Iridium parsing software
- Lightweight JSON Transmission Format

Founded 2018

Headquarters in Lakewood, Colo.

Leadership

CEO Rod Goossen

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Wildland firefighters and other first responders risk their lives to protect others' lives and property. Wildfires and natural disasters often occur in -or causes there to be- areas where communications including cellular networks are limited or not available. RoGO was founded to provide real-time critical communications technology engineered to save lives for first responders.

Technology innovation through satellite-based communications can help reduce the risks. Fostering immediate tactical coordination, RoGO DropBlocks track and share the location of firefighting crews, equipment and resources including bulldozers, water tenders, fire engines, high-value structures, medical evacuation rescue resources, makeshift water resources and more.

The most common cause of death for wildland firefighting is being trapped and overrun by the fire. Burnovers and entrapments most often occur during the "initial attack" deployment of crews with limited information about fire weather conditions. RoGO provides advanced communications for location and weather that can be deployed quickly for tactical coordination and safety.

Founded on Visionary Innovation

RoGO Communications was launched following the Yarnell Hill tragedy in 2013 when 19 Granite Mountain Hotshot firefighters were killed after being surrounded and overrun by the wildfire. Rod, an electrical engineer, talked with his brother Derek, an experienced firefighter involved in more than 100 wildfires, about how the tragic deaths could have been avoided.

Derek explained that tactical coordination is limited by the lack of technology to support situational awareness and coordination of resources. Crews and leaders fighting wildfires still rely on paper maps, handheld compasses, two-way radios and limited weather data.

Rod and Derek co-founded RoGO Communications in 2018 with a vision and determination to use technology to create a better solution that could save lives – a satellite-based communications platform for wildland firefighters.

Yarnell Hill Fire Tragedy

The tragic deaths of experienced firefighters in the 2013 Yarnell Hill Fire is an example of how conditions can turn dangerous rapidly. The wildfire near Yarnell, Ariz., was ignited by lightning. The fire overran and killed 19 members of the Granite Mountain Hotshots, a group of firefighters within the Prescott Fire Department.

While fighting the Yarnell Hill fire, the Granite Mountain crew had an airdrop of water mistakenly extinguish a controlled fire they ignited to create a safety zone. The water drop having ruined

construction of a safety zone forced the firefighter team to seek an alternative strategy that eventually put them in the path of a quickly moving fire driven by thunderstorm winds up to 43mph and channeled by the mountain terrain of canyon and slopes.

The Incident Command crew orchestrating the movement of crews and equipment did not know the location of the Granite Mountain crew. The wildfire quickly surrounded and entrapped 17 firefighters out of their 18 man crew. Location and weather data from the RoGO system may have prevented the misplaced aerial drop of water on their control fire location, alerted crew to weather conditions rapidly driving the spread of the fire and alerted other nearby crews of the impending danger sooner.

“This is a really big step in the right direction,” Juliann Ashcraft said. It’s been almost ten years since Juliann lost her husband, Andrew, in the Yarnell Hill Fire ... Ashcraft believes the new DropBlocks communication system will finally provide much-needed answers regarding safely fighting wildfires in Arizona. “If the people will incorporate this technology, this type of tragedy will not have to happen again in the future,” Ashcraft said.
CBS 5 Phoenix, [“Arizona fire crews testing new ‘DropBlocks’](#)”

The International Association of Wildland Fire published a 2014 article about lessons learned in the Yarnell Hill fire that firefighter resources (fire trucks, crews, dozers, etc.) need to be tracked in real time, using global positioning systems. RoGO is enabling these solutions with DropBlocks that can be deployed immediately during initial attack.

Market Landscape

Wildland firefighting is inherently dangerous, especially during the initial attack of the fire because of a lack of situational awareness and poor communication during that time. In the void of advanced communications, firefighters in the field continue to rely on paper maps, compasses, limited weather data and two-way radios. Additional risks include heat related injuries, smoke inhalation, falling trees, rolling rocks, and injuries from vehicles. Firefighters are under extreme physical exertion and risk of heart attack, many hiking for miles into the wilderness.

The primary strategy is to deprive the fire of fuel, including fighting fire with fire by strategically removing trees and brush with controlled burning and creating firelines to stop fire spread. Fires are called incidents. Often two or more fires merge to create a large fire referred to as complex incident. Initial incident “attack” deployment safety measures include positioning a firefighter as a lookout for weather and fire conditions, and establishing escape routes and safety zones.

Incident Command Posts leading the firefighting response are always in areas with a cellular network or use a satellite dish on a trailer. Firefighters are led by Task Force Leaders and Crew Bosses. Task Force Leaders oversee a geographical area of operation including multiple crews, such as bulldozer crews and hand crews, each led by a crew boss.

Task Force leaders usually operate out of their vehicles whereas hand crews carry all their equipment on foot, hiking miles into the forest, removing fuel and digging firelines. Hundreds or thousands of firefighters on crews attacking the fire are most often operating in areas with no cellular network connectivity.

RoGO DropBlocks send location and weather data. Handcrews of 20 firefighters create fire barriers to remove materials that will burn and spread the fire. Sawyer crews and bulldozer crews remove trees and large debris for the barrier.

Fire Weather is Critical for Safety

Weather often drives the strategy to contain wildfires. A large fire can also create its own weather situations. Unexpected shifts in weather conditions create the most dangerous conditions to firefighters and residents near

the fire. Firefighters use lookouts who hike miles away from the fire to observe weather conditions and report by two-way radios. Fast moving weather and wind conditions cause burnovers across fire lines, trapping firefighters.

Often during wildfire operations, incident command leaders don't know exactly where firefighters and supporting resources are located. RoGO DropBlock data provides all firefighters with actionable information for tactical coordination and safety.

With DropBlocks, and through real time data, it is possible for DFFM to more precisely track crew movement and crew locations on wildland fire incidents. ... "We know this will be the most important tool we have in our toolbox and we hope these locating units will help to prevent any more wildland fire tragedies from occurring," said Chief Darrell Willis, DFFM's Crews Supervisor.

[Arizona Department of Forestry and Fire Management](#)

Incident command typically has two experts monitoring weather – an incident meteorologist and fire behavior analyst. They use data from the National Weather Service or NOAA to observe and predict weather in the fire which can span 100,000 acres or more. Remote weather station sensors are sparse and often unable to provide hyper-local weather details in and around the fire.

Fire weather can be drastically different in a canyon or flat plain or against a rock face or mountain side. A large fire may be served by only a few federal weather stations. RoGO can provide hundreds of low-cost stations with weather sensors for current information shared with firefighters and incident command leaders.

RoGO Communications serves first responders by establishing a common operational picture (COP) so that everyone sees their and other fire resource GPS positions, near-real-time fire weather information and enabling tactical collaboration at the edge. A new smartphone app in development for Q1 2025 release will provide point-to-point messaging along with weather data. Other companies offer only partial solutions to address these market needs. Only RoGO provides a comprehensive communications and situational awareness solution.

Local, state and federal governments support more than 30,000 wildland firefighters in the United States. RoGO was founded to initially support firefighters in the Western United States. RoGO satellite-based products and services will support first responders and others anywhere in the world for wildfires and other uses including disaster responses for hurricanes, earthquakes and floods which have limited cellular network coverage due to the damage caused by the disaster.

According to the Institute for Defense and Government Advancement (IDGA), the number of wildfires have increased since 1970 by 400% in the United States with the Western United States at high risk to deadly wildfires. The institute's Wildfire Management Market Report 2023-2028 expects the U.S. market to grow from \$2.1 billion to \$3.2 billion in 2028, and globally from \$2.6 billion to \$3.6 billion in 2028.

DropBlock Technology Innovation

DropBlocks are small, lightweight, portable, ruggedized satellite-enabled devices that track GPS location for firefighter crews, equipment and resources. Communications include the status and location of firefighters and weather conditions of wind speed and direction and other IoT sensor data (temperature, humidity, etc.) transmitted back to Incident Command from remote areas.

A new smartphone app in development will enable point-to-point text communications to be relayed to specific individuals or groups.

The location of the fire

can also be tracked as well as what homes have already been mitigated or deemed a write-off, location of safety zones and medical evacuation rescue points, and more.

The Arizona Department of Forestry and Fire Management is testing new satellite-based crew locating and communication devices to improve safety. ... The department says they have been exploring ways to increase crew safety and enhance communication between firefighters and overhead for years.

National Public Radio (NPR)

[Arizona Department of Forestry testing new locating device to improve safety](#)

Task Force Leaders, typically working from their vehicle to coordinate four to six groups of crew resources, are provided a broadband satellite terminal with high-bandwidth 700 kbps full IP data connectivity to receive DropBlock GPS locations and weather data, also shared with Incident Command.

The Arizona Department of Forestry and Fire Management field tested DropBlocks during the 2023 fire season with six wildland fire handcrews. Field trial feedback is the reason RoGO is reducing the size of DropBlocks carried by firefighters hiking into the wilderness to fight the fire and adding point-to-point communications. For example, a handcrew leader can send a message directly to a bulldozer crew leader.

John Truett, an Arizona state fire management officer, said advances in technology have helped firefighters since then. “We have GPS and satellites and more robust communications,” Truett said. “We didn’t know where the firefighters were. Everybody was scrambling at that time.”

Associated Press [Arizona city holds 10-year remembrance for 19 firefighters who died in the Yarnell Hill Fire](#)

DropBlock patented solutions include strategic partnerships with technology partners. RoGO’s system is “platform agnostic,” and with partner collaboration can be

integrated seamlessly into software platforms being used at Incident Command to manage and quell the fire.

Novel innovation breakthroughs include being the first company we know of to make Iridium “parsing software” for efficient data transfer and using Lightweight JSON Transmission Formats to send data over the Iridium satellite network.

Leadership

Rod Goossen, co-founder and chief executive officer

Rod Goossen is an engineer, inventor and entrepreneur passionate and dedicated to bring technology solutions to market that solve real-world problems assisting first responders. He has received three different patents for satellite-based data communications capabilities, resource tracking and high-bandwidth data transfer.

He and his brother Derek founded RoGO Communications in 2018. Previously, Rod served as avionics engineer to three different aerospace companies: Dassault Falcon Jet, Gulfstream Aerospace and Bombardier Aerospace with concentrated work in aerospace communication and navigation systems. He earned an electrical engineering degree from Embry-Riddle Aeronautical University in 1996.

Derek Goossen, co-founder and chief strategic officer

Derek Goossen has served on various teams and has fought in more than 100 wildland fires. He is lieutenant, captain, and acting battalion chief for the Red, White and Blue Fire District in Colorado. He obtained Fire Officer I, Fire Instructor I, Driver Operator-Aerial Haz-Mat Technician, Fire and Driver / Operator Proctor, and National Register Emergency Medical Technician 4 (NREMT-B with IV) certifications from the State of Colorado.

Derek served as an engine boss, task force leader, and Incident Commander Trainee Level 4 (ICT4) in the Colorado Wildland Firefighting Program. He has served as a coordinator of wildfire training and expert in

Department Fire Management Officer John Truett says he’s already seen a noticeable difference from the days of relying on radio and cell service. ... “When we do have that incident where the fire environment changes rapidly on us, we know where our folks are at and we can communicate that with them.”

PHOENIX (3TV/CBS 5), [“Arizona fire crews testing new ‘DropBlocks’ fire tracking technology”](#)

wildfire-related administrative duties, receiving training in the fields of fire/EMS, fire inspection, and fire investigation. He is a member of the Wildland and Safety Committees and was selected as "Rookie of the Year" in 1999. Derek has taught fire and EMS courses for 150 firefighters county-wide, coordinated and instructed two fire and driver / operator academies. He supervises and directs a crew of six firefighters and serves as hiring and promotional coordinator for the fire district and driver / operator.