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## Simulation Technology, LLC

### Organization

Simulation Technology, LLC is a leader in driving simulation systems for firefighters, police, ambulance, and other emergency personnel. Their product line includes software and hardware configured with actual OEM vehicle dynamics and authentic cockpits — including gauges, dashboard controls, and communication equipment.

### Industry

Emergency responder training

### Geography

Corporate offices located in Chicago; installed systems worldwide

### Challenges

- Radio frequency interference and electronic cross-talk in the simulator communication system
- Creating a truly immersive training experience that replicates field conditions as closely as possible
- Overcoming student anxiety about driving to an emergency.

### Solution

Firecom wireless communication systems with interference-cancelling DECT 6 technology.

### Results

- Elimination of RF interference and electronic cross-talk
- Immediate cost-savings in service calls to “fix” the unfixable
- Enhanced communications among instructors and students
- Authentic replication of real-world situations

### Benefits

- Significant cost-savings
- Enhanced realism
- Improved safety and instructional efficiency
- Greater control over ambient noise in the instructional environment
- Reduced instructor fatigue

## Simulation Technology, LLC

Firecom delivers interference-free wireless communication and enhanced realism to emergency-responder training

**S**IMULATION TECHNOLOGY designs and manufactures simulators that closely match the driving conditions faced by firefighters, police, and other emergency personnel. Each simulator is designed to duplicate the interior of a



**REALITY TV:** A firefighter dons a Firecom wireless headset to drive one of Simulation Technology's simulators.

specified vehicle down to the last detail, including the dashboard, gauges, pillars, and exterior mirrors. Five high-definition monitors provide a 230-degree view from the driver's seat, and can be programmed to simulate a wide variety of weather conditions and road hazards.

### Challenges

Driving an emergency vehicle is a dangerous and demanding task. Psychological and physical stresses are high, and drivers rely on instructions being issued clearly and calmly. As such, the teaching effectiveness of a driving simulator depends not only on how closely it replicates real-world situations, but how well the instructor can communicate with students. Complicating matters further, simulation electronics are extremely complex, and generate substantial amounts of radio frequency interference. This makes it difficult for driving instructors and students to use a wireless intercom, even though wireless intercoms are increasingly common in real-world emergency vehicles.

Simulation Technology initially tried using Bluetooth communication equipment in its simulators, but quickly found their support staff overwhelmed by complaints about RF interference and electronic cross-talk. They also needed a method of controlling the amount of background noise students hear during simulations. Several manufacturers tried and failed to achieve a satisfactory solution. That's when Simulation Technology turned to Firecom for help.

### Solutions

Bluetooth-based systems operate at 2.4GHz, a frequency shared with numerous other RF-emitting devices. In contrast, Firecom's wireless systems use advanced DECT 6 technology transmitting at 1.9GHz. The result is a secure, distortion-free signal with a 1600-foot line-of-sight range between the headset and the intercom — over five times the distance and nearly 30 times the coverage area of Bluetooth. DECT6 also has multi-path capability, meaning the signal will bounce over and around objects such as buildings or vehicles, allowing clear communication even when obstacles block line-of-sight.

*“Almost every customer who trains on our equipment ends up buying Firecom products for their rigs. That just makes our simulations all the more real.”*

— **Todd Williams, President & CEO**  
Simulation Technology, LLC



“When we first tried Firecom’s headsets, we immediately noticed how easy they were to set up and install,” said Simulation Technology President and CEO Todd Williams, “but most important, we found they *completely* eliminated the electronic cross-talk problems that we assumed were inherent in wireless headsets.”

### Results

Firecom’s wireless systems not only solved the problem of RF interference, they helped Simulation Technology realize immediate cost savings, both in service calls and instructional efficiency. “The savings we have realized using Firecom’s suite of products have easily paid for the products themselves many times over,” Williams said. “Service calls for interference and cross-talk issues have disappeared, and the communication effectiveness between instructors and students has soared. Almost every customer who trains on our equipment ends up buying Firecom products for their rigs, so the equipment our students train on ends up being the same equipment they use when they run code. That just makes our simulations all the more real.”

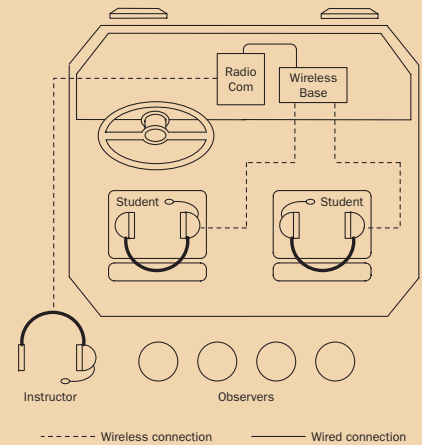
### Benefits

By incorporating Firecom wireless communication systems into its standard configuration, Simulation Technology has experienced:

- Immediate, bottom-line cost savings in terms of service inquiries and customer call-backs
- Better and more effective training experiences
- Enhanced realism and significantly greater control over ambient noise in the simulation environment
- Crystal clear, interference-free communications between instructors and students
- Improved communication, effectiveness, and productivity between and among trainees

## CUSTOMER SOLUTION AT A GLANCE

### Simulation Technology wireless installation



A typical configuration for a Simulation Technology installation consists of two wireless headsets for the student drivers and one single-ear headset for the instructor. The student headsets are the exact same equipment used by more than 100,000 firefighters and emergency responders around the world. The instructor’s headset enables intercom communication with the students at normal conversational volume, while still allowing interaction with the observers.

The end result is a simulation that precisely duplicates an emergency driving experience while allowing the instructor and student to interact with each other and share their reactions with an audience in real time. In the words of Simulation Technology President Todd Williams, “We can train more quickly and effectively, while greatly extending the amount of time our instructors can spend with each student.”



Firecom is the leading supplier of wireless communication solutions for firefighters and emergency responders

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