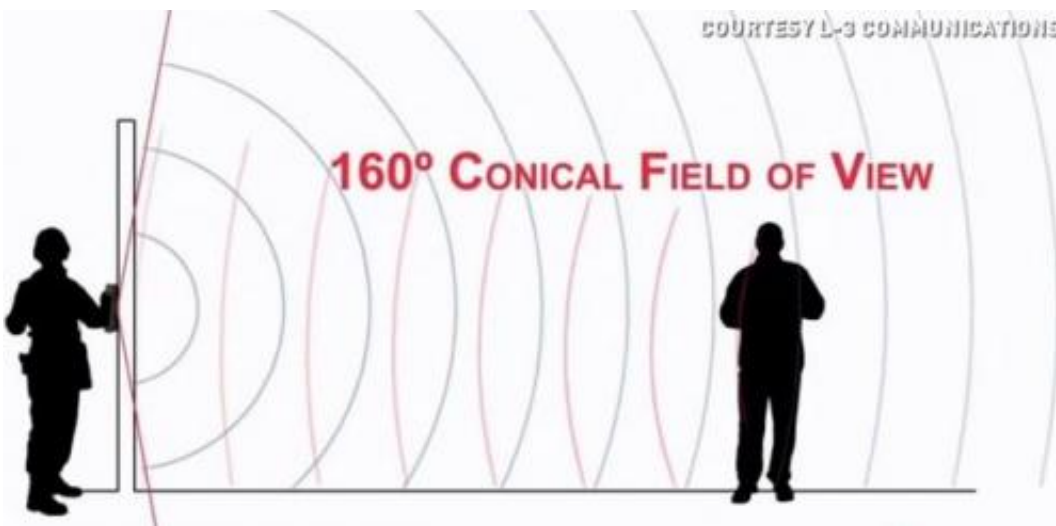


Law enforcement personnel using see-through radar tech

January 21 2015, by Nancy Owano



Radar that 'sees' through [walls](#) has raised privacy concerns, said the BBC on Tuesday. At least 50 US police forces are believed to be equipped with radar devices that can send signals through walls. The radar device, known as Range-R, is a radar motion detector. Range-R sends out radio waves that can detect the slightest movements, including breathing, from as much as 50 feet away. The story circulated widely among news sites this week, after Brad Heath, an investigative reporter at *USA Today*, wrote how the agencies had the radars enabling them to look through the walls to see if anyone was inside. Range-R was developed to assist US forces fighting in Afghanistan and Iraq, said the BBC, later taken up by

law enforcement agencies. *USA Today* said those agencies included the FBI and the U.S. Marshals Service and began deploying the radar [systems](#) more than two years ago. L-3 CyTerra describes its Range-R as "a highly [sensitive](#) handheld radar system designed to detect and measure the distance to moving and near-stationary personnel through walls constructed of common building materials."

The device covers a conical view of 160 degrees, weighs 1.2 pounds and uses stepped frequency continuous wave (SFCW) [radar technology](#) and proprietary target detection algorithms. Three antennas are part of the design. A transmit antenna and a receive antenna face towards the target area. A third, rear-looking antenna faces the operator of the system and is used to reduce the false alarms caused by user movement or a movement behind the user. When Range-R is in scan mode, [radar](#) waves are transmitted through the wall and into the adjacent room area. The waves travel until they strike an irregularity and are reflected back to the receive antenna. The return signal is analyzed by a signal processing algorithm. If a target is detected, the alert results are indicated on the graphics display and illumination of a blue LED indicator light. The product operates as "a highly sensitive Doppler motion detector," said the company site, providing first responders with critical information.

Last year, the Range-R made news in a Denver court. Range-R had been used by police entering a house to arrest a man who had violated the terms of his parole. Lawyers questioned if officers entered his home lawfully. The judges upheld the search. At the same time, they wrote that they had "little doubt that the radar device deployed here will soon generate many [questions](#) for this court and others."

Rights advocates are concerned that new technologies engineered to help and protect people may also pose opportunities for abuse.

"The idea that the government can send signals through the wall of your

house to figure out what's inside is problematic," said Christopher Soghoian, the American Civil Liberties Union's principal technologist," said in *USA Today*.

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