

Popular Mechanics

How Police Officer Body Cameras Work

Following the controversial Ferguson Grand Jury announcement, President Obama pledged funds to buy cameras cops would wear on their bodies, and even many police departments support technology.

By Erik Schechter
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Long before the [Ferguson grand jury](#)'s decision not to indict officer Darren Wilson for the Aug. 9 shooting death of Michael Brown, which this week prompted President Obama to call for more body cameras to record police activity, departments around the country had been looking at acquiring more of these devices. But with the President's promise to provide federal funds, the pace of adoption is about to speed up greatly.

"If the federal government puts another \$75 million into this and puts another 50,000 cameras in the field, that would significantly accelerate the pace at which the markets are moving," says Rick Smith, CEO of TASER International, which makes AXON body cameras.

According to Smith, some police unions have resisted body cameras, thinking they might be used as a gotcha device to punish cops who made innocent mistakes. But things are changing because of Ferguson—the controversy convinced many police officers that body cameras protect them too, Smith says. "You now have officers say, 'I don't want to be Officer Wilson. I want a camera, so I can show my side of the story,'" he says.

Who Makes Them

The top three players in the body camera market are TASER International, VIEVU, and Digital Ally. TASER offers two types of [AXON cameras](#). One is a compact body camera, smaller than a deck of cards and worn on the officer's chest. The other, AXON flex, connects by wire to a lens that can be magnetically mounted to a pair of Oakley sunglasses. This layout allows the camera to turn with the officer's head.

Both AXON cameras have an internal digital storage of 8GB and a battery life of about 14 hours, so the devices won't die during an officer's shift. They capture a wide field of view through a 130-degree fisheye lens. The resolution is just 640 x 480, because HD puts demands on storage, bandwidth, and battery power. "The reason why we chose not to go HD on the camera is because it makes your files sizes 5-10 times larger," Smith says.

By contrast, rival provider VIEVU offers a 1280 × 720 [LE3 body camera](#). Company president Steve Lovell says the high definition is advantageous when "when it comes to courtroom evidence." That tends to produce larger files, but the VIEVU camera has 16GB of internal

memory and 12 hours of recording time thanks to an extended battery pack. The LE3's field of view is just 68 degrees, much smaller than TASER's. That's deliberate, VIEVU officials say—they designed the camera without night vision, infrared, or a fisheye lens because it is meant to record just what the officer would be able to see, Lovell says.

Because it would generate too much data and drain the batteries, these cameras aren't recording non-stop. But that's a problem—if an incident were to catch an officer off-guard, it could be halfway over by the time he or she can turn on the camera. For such situations, the TASER AXON cameras have a buffering capability that records the 30 seconds of activity that happened before the police officer turned on the camera. The VIEVU LE3 lacks that buffering capability, but Lovell says there's a reason. "When the officer does not have direct control over the start/stop of the recording, the Officer may accidentally record in a location that is illegal," Lovell says.

Smith says the AXON camera system does not record audio during buffering mode, so non-work conversations will not be recorded. In addition, there's a privacy function that allows the officer to stop all audio and video recording.

The Chain of Custody in the Cloud

AXON's police cams generate 2GB of data per officer per day. That's evidence. "You can't just use Dropbox or some sort of consumer application to store your files," Smith says—there has to be a secure, tamper-proof way to store data that adheres to the rules safeguarding the chain of custody. AXON uses its cloud-based, subscription service called Evidence.com.

"We have a dedicated hardware dock, which is like a charging station but is in fact an encryption module that connects to the camera, pulls data off of it, encrypts, and sends it to Evidence.com for storage and for... when the data is being handled," he says. We spent tens of millions of dollars building it—the project leader was project manager for Xbox Live."

VIEVU offers its own cloud-based solution, VERIPATROL Cloud, but doesn't require it as part of the camera system, Lovell says. Both systems rely on digital signatures to safeguard against tampering.

Details Matter

[A 2012-2013 study](#) conducted with the Rialto, Calif., police department found that wearing body cameras resulted in a 60 percent decline in the use of force by police and a whopping 88 percent drop in citizen complaints against officers.

For those outside the industry, the call for more body cameras "sounds good in theory, but the details matter and implementation issues abound," says Patrick Eddington, a civil liberties and homeland security policy analyst at the CATO Institute, in Washington, D.C.

More broadly, it reflects a breakdown in public trust of law enforcement. "Technology alone can't fix that problem," he adds. "Only a return to demilitarized, community-grounded policing

practices—with stringent and effective oversight mechanisms—will help rebuild trust between law enforcement and the communities they serve.