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Thread: [WiFi mesh networks can detect your breathing](#)

tcsH - October 10, 2017, 1:59 am

They just need to add Origin Wireless' algorithm.

In the world of indoor security systems, motion detection usually relies on cameras or at least dedicated sensors. Both types of solution add to hardware plus installation costs, not to mention that not everyone is comfortable with having cameras pointing at them all the time. Origin Wireless, on the other hand, found a way to make use of WiFi signals bouncing around a room to detect even the slightest movement -- down to something as subtle as a person's breathing rate. What's more, this "Time Reversal Machine" technology is essentially just some clever algorithmic work with little burden on the processor, so it can potentially be added to any existing WiFi mesh routers via a firmware update. In other words, security system vendors should take note.

A "Time Reversal Machine" setup consists of at least two hubs: one router is designated as an "Origin" transmitter, with the remaining routers acting as "Bot" receivers. Unlike the conceptually-similar Xandem which uses a 2.4 GHz signal, the Origin and Bot devices operate on 5 GHz over 802.11a, 802.11n or 802.11ac; and to avoid interference, the signal relies on CSI (channel state information) which is usually only used during mesh network configuration.

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