

New threat to Wi-Fi: light bulbs!

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SANTA BARBARA, CALIF. -- Wireless technologies like WiMAX and LTE are supposed to bring us the speed of Wi-Fi (or better) with something approaching the range of existing wireless broadband, which could replace the need for Wi-Fi hotspots. Now, Wi-Fi back at the office is under threat, too: from light bulbs!

Researchers at Boston University's College of Engineering are working on a Wi-Fi replacement technology they call "Smart Lighting" that sends data not via the radio spectrum, but the visible light spectrum. The idea is that standard dumb light-bulbs would be replaced by LED "smart lights," which flicker at imperceptibly high rates as a way to transmit data within an office. Researchers believe initial speeds would hit between 1 and 10 megabits per second.

Data transmission between servers and LEDs would take place over existing electrical wiring.

Pushing data around an office like this is more energy efficient and eliminates clutter and wiring. But its best feature is security. Because it's based on visible light, the signal won't pass through walls and out into the street where it can be picked up by some war-driving cracker.

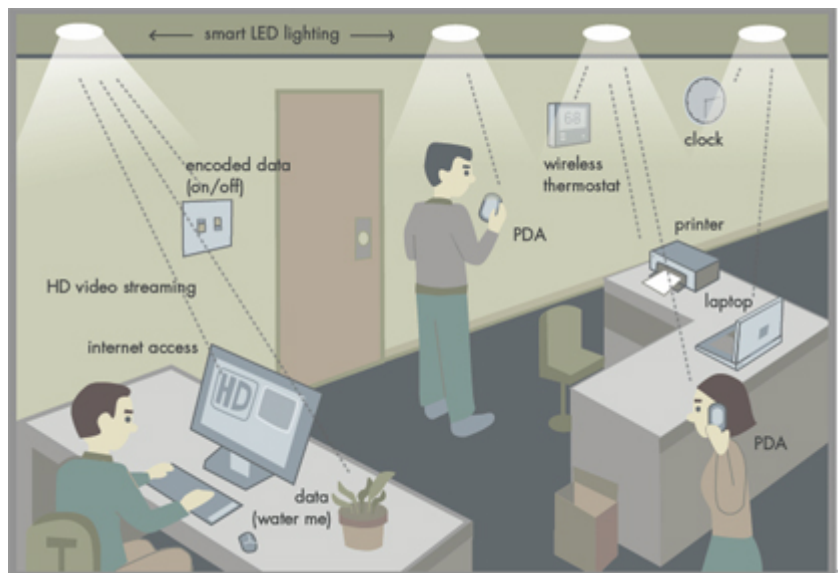
This technology reminds me of the Timex Datalink wristwatch I owned about 13 years ago, which was built in a partnership with Microsoft. You installed special software on the PC, and you updated the calendar and other PIM data on the watch by holding it up to the screen. The monitor flashed visible light in a kind of binary Morse Code. It was very cool, but Timex and Microsoft eventually transitioned the watch to USB connectivity.

There's a consensus in the light bulb community (there's a light bulb community?) that LEDs are the future anyway, and that LED technology will gradually replace fluorescent lights. Why not take advantage?

I love the idea of LED smart lighting, because it's a rare instance of new technology that involves the removal of equipment from an office and the removal of electromagnetic radiation from the airwaves.

What I don't understand is: Why go from the electrical system to visible light for devices like PCs that are always plugged into the electrical system directly? I also don't understand how devices talk back to the LEDs. Do they flash, too?

Anyway, I'm sure the geniusus at Boston University will work all this out.



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