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In the Sci-Fi Channel's update to the classic series "Battlestar Galactica," only one of the fleet of human battle ships in space survives the attack of the invading Cylons. It survives not through skill or daring, but through obsolete technology. Unlike the other Battlestars in the fleet, the captain of the Galactica did not trust wireless technologies and insisted for the sake of security that all his computer systems be hard-wired for connectivity. The Cylons begin their attack by hacking the wireless systems of the battle fleet, shutting down their critical operations and leaving them helpless. The hard-wired Galactica survives, and with it the human race. Accountants who use Wi-Fi connections on the road or in their offices should pay heed because of the parallels with today's Wi-Fi technology. Wi-Fi connections have proven grossly unsafe – so much so that no agency of the federal government conducts any business over Wi-Fi.

What Wi-Fi has going for it is that it is inexpensive and easy to use. What works against it is that its security can be cracked easily with tools available freely on the Internet, and the fact that it uses the garbage spectrum of 2.4 GHz, which is shared with every other Wi-Fi network, millions of cordless telephones, Bluetooth devices and every microwave oven on the planet.

But many small accounting offices (and home offices) have had little other choice. Wi-Fi may be unsecured, but it is virtually the only alternative if the building won't allow access to string Ethernet cables. Until now, that is. Earlier this year, the HomePlug Powerline Alliance announced the certification of 20 products for compatibility with the version 1.0 HomePlug standard. This

simple announcement, though aimed mostly at the residential market, is likely

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a signal over the 110-volt sine wave of the AC power. It comes in two basic interfaces, for USB and Ethernet. For networking in a small accounting office, simply plug HomePlug power-line adapter to the router and plug it into the wall power socket. Each of the other computers then connects to the power system through an Ethernet or USB power-line adapter. The advantages over other forms of networking are substantial. HomePlug networks have a range of about 1,000 feet of power cable, easily out-pacing Wi-Fi and its inability to travel through walls or for more than 30 feet. And they do not require the special cabling of Ethernet and other hard-wired networks. Their data transfer speeds (hypothetically 14 megabits per second but in practice less than half that rate) are still faster than Wi-Fi and more than sufficient for file sharing and broadband applications today.

Until now, much of the development effort for this technology has been behind closed doors or in products from companies I've never heard of. And that development has not been without problems – the signal in the past has been jagged with line noise, spikes, surges, and brownouts (periods of low voltage), all of which makes it a rough medium for communications. The Alliance claims that its new algorithms avoid these problems and others caused by a power sine wave that is inconsistent at best. Of course, there are other limitations, as well. Under Windows, the network can handle a maximum of 16 computers; under McIntosh or UNIX, a total of three. And the network, while cheaper than tearing down walls, is a hair more expensive than Wi-Fi. Plan on spending \$80 to \$100 per computer for an adapter. Nonetheless, the HomePlug Powerline Alliance says the technology is ready for implementation.

Of course, the promises of the manufacturers are not always sufficient for accounting firms to adopt since accounting firms must both keep pace with new

technologies and showcase them for clients. So we (at Kent Associates) will

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