

wire-less

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Wireless communications is a huge field. From radio and TV broadcasting to pagers, mobile phones, iPods, and satellite communications, its reach into the business and private world is unstoppable. Mobile phones have become second nature—we're "wired" into our work or private worlds, whether we're on the job or on the go. The communication avalanche comes at a price; it's not fun driving behind a car whose driver is conducting vigorous conversation on the phone while looking at the next turn-off sign. It's no fun being made privy to another person's private conversations—whether we like it or not. The technology certainly comes with concerns for privacy, which to many pale in comparison with its huge promise for strengthening security.

The most visible manifestations of wireless technology are the gadgets—cordless phones, cell phones, iPhones, key fobs, TV "zappers," RTK total stations with Bluetooth. Behind them are the networks—local and wide area—which spread rapidly once the IEEE 802.11 standard became widely accepted.

The 900 MHz cordless phone one may be holding onto for nostalgic reasons operates over a short distance, typically just a few meters. A pager or a mobile phone is plugged into a land-based, wide area wireless network dotted with cell towers; the phone will work as long as it is within range of at least one tower. But since these networks are operated by different wireless carriers, and they are not the same from country to country (even if the phone is from the same manufacturer), the wireless world remains rather fragmented—my wireless phone is not likely to work in Japan, for instance.

Much research has gone not only into standardizing usage via land-based networks but also into expanding the applications of mobile devices that use the Internet. Research is ongoing in Japan on adapting mobile music players to serve as PodWalks—typically an iPhone displaying visual content (such as maps, photographs, and movies) synchronized with narrative content.

PodWalks use the Internet-based broadcasting format of Podcasts to guide us, visually and with audio, in the real world. These innovative audio tours promise to revolutionize how we learn about our countries, their geographies, histories, and people. More about PodWalks in an article in this issue by Professor Masatoshi Arikawa and Ken'ichi Tsuruoka, Japanese scientists conducting research on mobile cartography at the University of Tokyo.

The Global Positioning System is certainly no mystery in the geospatial world. Trimble and other designers of surveying and mapping technology have been augmenting GPS with other positioning technology as well as with wireless communications to create "complete solutions" for surveying, automobile navigation, machine guidance, asset tracking, wireless platforms, and telecommunications infrastructure. In "Mapping the Invisible World," Anna Tapp and Rick Bunch use one such adaptation to map wireless coverage in national parks, so that more people can enjoy them no matter how remote these scenic areas may be.

Public safety is a major beneficiary of the spread of wireless technology with integrated GPS. People also generally approve of the use of this technology for national security, even though questions have surfaced recently about "being watched," and whether the trade-off between security and privacy is advisable or, indeed, necessary. Read about one real estate professional's day under the watchful eyes of wireless GPS and, decide for yourself. Written by *Washington Post* staff writer Ellen Nakashima, the article underscores the obvious—we're wired into the wireless.

Ilse Genovese
The Editor

