Turning tomorrow's office from wired to wireless will be focus of new Center for Wireless Communications at UCSD

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It won't be long before the latest buzzword for cutting- edge, high-tech business offices will turn from "wired" to "wireless."

If researchers reach their goal at the new Center for Wireless Communications at the University of California, San Diego, tomorrow's offices will rely on untethered devices carrying voice, data, print or even video that could fit into the palm of your hand.

Call them people phones.

"Not only will you be able to get rid of all wiring for computer terminals, you will be able to move your data easily from one place to another," said Laurence Milstein, acting director of the wireless center.

"You'll be able to get this all down to a hand-held computer."

The expected time frame for such a hand-held device?

"It's just a guess, but right now I think four years," said Milstein.

Putting a personal wireless communicator into the hands of office workers is a research priority of the new Center, supported primarily by companies with business interests in the field.

Officially opened February 27, six firms have signed on including Fuji Electric, Hughes Network Systems, Nokia, PSCI, QUALCOMM, and TRW. Two others are expected to join in the near future.

Under the agreement, full members who contribute up to $80,000 in annual fees participate in the direction of the Center's research on the Center Board. The companies also are offered first rights on patents emerging from the Center. Associate members are assessed a flat $15,000 fee, and are offered rights to patents only after the first right of refusal has been extended to full members.

The Center already has received a $500,000 anonymous gift to set up its first endowed chair in wireless communications. The gift will be used to recruit a senior faculty member to the Center. Funds for a second endowed chair will come partially from membership dues.

As envisioned, the Center would concentrate on five technical areas, each directed by a senior faculty member:

*communications theory, which involves various techniques for transmitting radio frequency signals in digital communications systems to permit a large number of users;

*communications networks, which include ways to route messages, including the meshing of wired (fiber) and wireless networks;

*antenna design and propagation, which encompasses such things as fixed and mobile antenna arrays, for both indoor and outdoor uses;

*multimedia applications, which incorporate techniques necessary to allow simultaneous wireless services of voice, data and video;

*radio frequency circuit and ASCI (application specific integrated circuit) design, needed for low-power electronic devices and power amplifiers.

"We designed this center so it would not be a niche-type center that would take a current strength at UCSD and simply expand upon it," said Milstein. "We took the whole gamut in research and development in wireless communications and tried to make the Center broad enough to incorporate all research interests."

The idea of focusing on office communications came during the first meeting of the Center's board.

"You can have two basic tradeoffs," Milstein said. "You can have very wide coverage or very high capacity in a small region.

Both are legitimate problems, but we decided to emphasize capacity over coverage.

"This is an area of current interest to the industry, but we are trying to push the state of the art. That's why we liked it."

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