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From: Dewayne Hendricks <dewayne@warpspeed.com>
To: Dewayne's Wireless News List <dewaynes@warpspeed.com>
Date: 6/11/01 9:24AM
Subject: Aether Wire in Red Herring and MSNBC News Link

[Note: This item comes from a friend who works at Aether Wire, one of the few remaining ultrawide band companies. DLH]

At 14:58 -0700 6/7/01, vince wrote:
>From: vince <vince@aetherwire.com>
>Subject: Aether Wire in Red Herring and MSNBC News Link
>Date: Thu, 7 Jun 2001 14:58:15 -0700
>MIME-Version: 1.0
>
>We got some coverage in the June 6th issue of "Red Herring". See below links.
>
>See also Vernor Vinge on the far bottom.
>
>Vince
>
>http://www.redherring.com/story_redirect.asp?layout=story_generic&doc_id=RH10 60019506&channel=10000001
>
>http://www.msnbc.com/news/583338.asp
>
>Inside Tech
>
>How low can networks go?
>By Glenn Zorpette
>June 6, 2001
>
>Bluetooth and 802.11 may turn out to be the Swiss Army knives of
>wireless networking. But if all that's required is a corkscrew,
>picoradio could be the way to go.
>
>Unlike the two better-known wireless standards, picoradio networks
>are not meant to connect computers, printers, or other peripherals.
>They merely track the position of each element in a network and
>maybe say a bit about what's happening there. Picoradio's data
>transmission rate is slower than Bluetooth or 802.11 -- just a few
>hundred bits per second -- but its cost and power consumption are
>minuscule.
>
>A picoradio network consists of a bunch of tiny, cheap electronic
>devices called piconodes. Each piconode has a built-in radio,
>processor, memory, and power source. Each is loaded with software
>that allows it to communicate with any other piconode, no matter how
>distant, by routing messages through whatever piconodes happen to be
>between them. Because it's much more efficient to send signals over
>short hops than long ones, such a network consumes very little power.
>
>Equipped with sensors for light, temperature, and humidity, a few
>hundred piconodes could control the climate in an office building.
>Piconodes could tag each item in a cargo shipment to ensure that a
>helicopter, say, arrives along with the necessary spare parts.
>
>CARGO CHIP
>Two companies are on the verge of introducing picoradio networks.
><http://www.aetherwire.com>Aether<http://www.aetherwire.com> Wire &
>Location in Nicasio, California, is testing a network designed for
>tracking military cargo. And <http://www.rfwaves.com>RFWaves of
>Or-Yehuda, Israel, has developed a system targeted at nonmilitary
>applications.

>
>Military applications are a potentially huge market. "The Navy is
>the largest shipper in the world," says Vincent Coli, Aether Wire's
>vice president of marketing. But he adds, "Our goal is to go
>commercial. Commercial carriers tell us there is no good method of
>tracking items within cargo containers. If we don't do it, somebody
>else will."
>
>Indeed, interest in low-power networks has recently taken off. Last
>November, the Institute of Electrical and Electronics Engineers set
>up a "low-rate study group" to create a standard designated as
>802.15.4. The group includes members from
><http://www.redherring.com/index.asp?layout=tick_profile&ticker=MOT>Motorola
>(NYSE:
><http://www.redherring.com/graph_adv.asp?symbol1=MOT&ticker=MOT>MOT),
><http://www.redherring.com/index.asp?layout=tick_profile&ticker=PHG>Philips
>(NYSE:
><http://www.redherring.com/graph_adv.asp?symbol1=PHG&ticker=PHG>PHG),
><http://www.redherring.com/index.asp?layout=tick_profile&ticker=NOK>Nokia
>(NYSE:
><http://www.redherring.com/graph_adv.asp?symbol1=NOK&ticker=NOK>NOK),
>Invensys (OTC: IVNSY), AMI Microsystems, Agere Systems (NYSE:
>AGR.A), and
><http://www.redherring.com/index.asp?layout=tick_profile&ticker=ETN>Eaton
>Corporation (NYSE:
><http://www.redherring.com/graph_adv.asp?symbol1=ETN&ticker=ETN>ETN).
>
>WHAT POWER SHORTAGE?
>Meanwhile, the University of California's
><http://bwrc.eecs.berkeley.edu>Berkeley Wireless Research Center is
>working on the ultimate picoradio network. Researchers say each node
>will cost 50 cents and consume a mere 100-millionths of a watt. One
>double-A battery could power such a node day and night for three and
>a half years.
>
>That's the dream. The reality is on view at the Wireless Research
>Center, a cluster of cubicles and laboratories above an Eddie Bauer
>clothing store in downtown Berkeley. Here, director Gary Kelson
>shows off the current piconode prototype, a green stack of
>3-by-4-inch circuit boards that fits in his palm. It's too big. And
>in this corner of the wireless world it qualifies as a power hog,
>sucking down 100 milliwatts, the same as a Bluetooth radio.
>
>A new version will arrive in the next few months, according to the
>picoradio project leader, Jan Rabaey. It will fit on a single
>3-by-3-inch board and use just 10 milliwatts.
>
>The fixation on power consumption isn't just an engineering fetish.
>Researchers want to get the power use low enough to run piconodes on
>energy scavenged from the sun -- or even from the vibration of a
>ventilation duct. That way networks with hundreds or thousands of
>nodes wouldn't need a full-time tech just to replace dead batteries.
>
>HIDE-AND-PICO
>Among piconode fans is best-selling science fiction author Vernor
>Vinge, who likes the idea so much he used it in his latest novel, A
>Deepness in the Sky. He envisions practical uses for picoradio
>networks, and foresees a day when they will help keep track of
>telephones, televisions, ovens ... even people. Wearing
>piconode-equipped virtual goggles, piconode-tagged friends could use
>"consensual imaging" to have "parties that aren't there but that
>appear to be there," Mr. Vinge says.
>
>"It's an incredibly big win," says Mr. Vinge, a former computer
>science professor. "Think about how much time you spend looking for

>things or wondering where your possessions are."