New Wi-Fi standard takes the slow road

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An industry group developing a new wireless networking standard fails to approve one of its leading components. Next: a compromise.

Marguerite Reardon
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The process to establish the next-generation Wi-Fi standard, which promises to quadruple transmission speeds, has stalled as members of the working group developing the standard failed to pass the main proposal onto the next stage.
The proposal, put forth by the vendor group called Task Group 'n' synchronization, or TGn Sync, did not get the support of the required 75 percent of attendees at the Institute of Electrical and Electronic Engineers 802.11n task group meeting in Cairns, Australia, this week. At the first confirmation vote a few months ago, the TGn Sync plan won backing from 57 percent of the attendees. This time it got only 49 percent of the vote.

But people involved in the process say this is business as usual in the IEEE standards process.

"We expected this to happen," said Boyd Bangerter, director of the radio communications lab for Intel, one of the main supporters of TGn Sync. "It's not necessarily the outcome we wanted. But that's the risk you run when you have a consensus-oriented standards process."

Since the proposal has now twice failed to reach a super majority, the 802.11n task group will consider other proposals, including the strongest alternative from a rival group called World-Wide Spectrum Efficiency, or WWiSE.

About a year ago, more than 30 proposals had been submitted to define specifications for the 802.11n standard. Today, the industry has split itself into two main camps. The WWiSE group is led by Airgo Networks and includes other heavyweights such as Broadcom, Motorola, Nokia, France Telecom, Texas Instruments and NTT. On the other side of the debate is the TGn Sync group, supported by Intel, Atheros Communications, Nortel, Samsung, Sony, Qualcomm, Philips and Panasonic.

Both proposals are based on a technology called multiple-input/multiple-output (MIMO), which could boost throughput on wireless LANs to over 300 megabits per second, though the standard will call for a minimum of about 100mbps. The 802.11a and 11g standards used today provide throughput between 20mbps and 24mbps. MIMO is a technology that works by

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allowing two or more distinct signals to be transmitted over the same 802.11 radio channel at the same time with no interference. This allows more data to be sent over the available radio spectrum than is possible with standard transmissions today.

While the TGn Sync and WWiSE proposals are very similar, they differ in several details. The authors of WWiSE have kept optional features to a minimum, which supporters of the draft claim will help keeps costs down. Meanwhile, the TGn Sync proposal is much more involved, which its supporters say makes it more comprehensive. For example, WWiSE favors keeping the channel size at 20MHz, while TGnSync proposes adding an option that increases it from 20MHz to 40MHz. WWiSE proposes only six mandatory link rates, while TGn Sync would require dozens of different link rates.

So far the groups appear to be deadlocked, with neither side having enough votes to move their own proposal forward. But people in each group say they are certain that a compromise will be worked out eventually.

"We really need to have an open dialogue between the two camps," Bangerter said. "Compromise is always part of the standards process."