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Group proposes faster Wi-Fi specification

Networking consortium submits proposal for faster Wi-Fi, as battle lines are drawn between rival groups.

Richard Shim

Aug. 12, 2004 4:15 p.m. PT

2 min read

A consortium of networking companies has readied its proposal for the next wireless networking standard, as battle lines are drawn between rival groups.

The group, calling itself WWiSE (short for World Wide Spectrum Efficiency), on Thursday announced that it is submitting suggestions for the Institute of Electrical and Electronic Engineers 802.11n task group to consider in developing the next-generation Wi-Fi standard.

The 802.11n standard will allow for actual throughput rates of up to 100 megabits per second. In comparison, 802.11g, the current fastest Wi-Fi standard, has optimal rates of 54mbps but average rates of about half that.

The first draft of the 802.11n spec is slated for the middle of next year, with a completed standard planned for late 2006 to early 2007.

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The WWiSE announcement comes as a Friday midnight deadline for submissions to the task group draws near. The IEEE 802.11n group has scheduled a mid-September meeting in Berlin to discuss the proposals.

Another group of companies, informally calling itself TGnSync, has similar requests for the IEEE's 802.11n task group in the works and plans to submit its suggestions by the Friday deadline. TGnSync members include Atheros, Agere, Royal Philips Electronics and Intel.

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The two groups differ on the licensing of intellectual property. While both groups claim that they will comply with reasonable and nondiscriminatory (RAND) licensing terms, WWiSE said that if its proposal is accepted, its members have agreed to what it is calling RAND under zero royalty (RAND-Z).

WWiSE companies have agreed to a reciprocal royalty-free individual license option, which means that members won't charge developers for an 802.11n license. That will translate to lower costs to developers, manufacturers and consumers, according to the group.

The WWiSE submission also proposes the use of the 20MHz radio band to ensure worldwide spectrum compliance, making it easier and faster for 802.11n-based products to be released globally. In addition, the proposal calls for backward compatibility with current Wi-Fi standards.

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WWiSE companies will use MIMO-OFDM (multiple input, multiple output-orthogonal frequency division multiplexing) technology to achieve high-speed data throughput. Airgo Networks has been developing and shipping chips based on MIMO technology and recently added Belkin as a partner to ship products using the chips, starting in October.

Airgo is a member of the WWiSE group. Others include Bermai, Broadcom, Conexant Systems, STMicroelectronics and Texas Instruments.

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[Science](#)

Get Ready to See a Sky Explosion That Only Happens Once Every 80 Years

A nova will soon be visible with the naked eye for a short window of time.

Joe Hindy

5 min read 

June 16, 2024 4:00 p.m. PT



NASA created an animated gif to demonstrate the nova's progression. See the white dwarf (on the right, in the ring) as it pulls in solar material continually shed by the dying red giant. The result? A thermonuclear explosion.

NASA

Every 80 years, the skies grant us a rare gift: a stellar explosion called a nova that outshines all other cosmic wonders. This celestial fireworks show occurs when a white dwarf star erupts, increasing its brightness ten thousandfold.

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and another show is about to start very soon. NASA scientists and astronomers are waiting patiently to see it, just like we've yearned to see [solar eclipses](#) and the [aurora borealis](#) over the past few years.

In a nova event, a white dwarf star pulls in solar material from a nearby red giant. When the heat and pressure from this get too high, the result is a thermonuclear explosion. That makes the white dwarf appear brighter in the sky, but it doesn't disintegrate, and once the explosion dissipates, the star goes back to its original brightness. That massive eruption is a nova.

The nova can be seen with the naked eye for upward of a week after it happens. For that period, it'll seem like a new star has appeared in the sky. According to NASA, the explosion could happen anytime, day or night, between now and September, although scientists say it may take longer.

This [NASA video](#) shows what it looks like.

Last one from this star system was in 1946

The cosmic light show is courtesy of T Coronae Borealis, also known as the Blaze Star or T CrB. It's a binary star system comprised of a white dwarf and an ancient red giant about 3,000 light years away from Earth in the Northern Crown of the Milky Way. It's part of the Corona Borealis constellation that makes a distinctive C-shape in the sky, primarily during the summer months.

The white dwarf, which is the dead remnant of a star, is about the size of Earth but has the same mass as the sun. Meanwhile, the aging red giant is a dying star that's shedding material out into space. The white dwarf's massive gravitational pull is hauling in the ejected material from the red giant. Once the white dwarf has accumulated enough material, the heat increases so much that it causes a runaway thermonuclear reaction. That explosion is called a nova.

The prior nova from this star system occurred in 1946. It's a cycle that's been going on since it was first discovered more than 800 years ago.

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"It's a once-in-a-lifetime event that will create a lot of new astronomers out there, giving young people a cosmic event they can observe for themselves, ask their own questions, and collect their own data," said Rebekah Hounsell, an assistant research scientist at NASA's Goddard Space Flight Center. "It'll fuel the next generation of scientists."

Where is Corona Borealis?

You likely aren't as familiar with Corona Borealis as you are with constellations that are easier to spot, like the Big Dipper. It's difficult to find in the night sky unless it's clear. Light pollution from major cities can also make it more difficult to find.

NASA says the easiest way to find Corona Borealis is to find Vega and Arcturus, the two brightest stars in the Northern Hemisphere. (Skygazing apps for your phone might help with this.) From there, you can essentially draw an imaginary line between the two. Corona Borealis is almost right in the middle. You can use the graphic below to see what we mean.

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The nova will happen in the Corona Borealis constellation near the Hercules constellation and right between Vega and Arcturus.

NASA

Alternatively, you can also seek out the Hercules constellation and Corona Borealis will be right next to it. Remember that you can't see the star in question until the nova pops, so if you look up in the sky before it happens, the spot where the nova will occur won't be visible.

When will the nova take place?

Nobody knows for sure. Astronomers and scientists only know that the nova is due to erupt at any time. Most of them agree that the nova should take place anytime before about September, although it could take longer.

Since the nova could occur at any moment, NASA is relying on citizen astronomers and space enthusiasts to call it out when the nova happens.

"Using social media and email, (observers will) send out instant alerts," said Elizabeth Mays, chief of the Astrophysics Particle Physics Lab at NASA's Goddard. "We're counting on that global community interaction again with T CrB."

Early detection can also help NASA collect more data about the event to better understand its mechanics.

"We'll observe the nova event at its peak and through its decline, as the visible energy of the outburst fades," Hounsell said. "But it's equally critical to obtain data during the early rise to eruption — so the data collected by those avid citizen scientists on the lookout now for the nova will contribute dramatically to our findings."

Will I need a telescope to see the nova?

No. NASA says the nova will be visible to the naked eye on a clear night.

It's important to know what to look for. The nova won't look like an explosion like you see in Michael Bay movies. It'll simply look like another star in the sky that wasn't there previously.

It'll also be pretty bright, so it should be fairly noticeable. Those with telescopes and binoculars will have a better view.

What's the difference between a nova and a supernova?

Most people have heard of the term "supernova." It's the last dying gasp of a star as it goes dark. That last dying gasp, however, also happens to be the largest explosion ever witnessed by humans, as the star violently ejects material into space. Scientists believe that supernovas are responsible for elements heavier than iron in the universe. Weirdly enough, even the iron in your blood can be traced back to supernovas or similar cosmic explosions.

A nova, on the other hand, requires two stars. One star is always a white dwarf, while the other is usually a red giant.

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There are other types of novas as well. Hypernovas are supernovas that achieve a certain size and brightness. Usually, they're about 10 or more times brighter than a standard supernova. Another type, an extremely rare kilonova, occurs when two neutron stars collide, releasing an incredible gravitational wave along with electromagnetic radiation.

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