

How the Aussie government "invented WiFi" and sued its way to \$430 million

By [Joe Mullin](#) | Published about 21 hours ago

The real history of WiFi: "Everybody had that."

Peek into CSIRO wireless workspaces with Dr. O'Sullivan and others.

Defense lawyers have been able to point to some serious flaws with CSIRO's version of history, however. For starters, the whole industry was already working towards better wireless networks. In 1985, the US government opened up a wide array of the wireless spectrum for use without a license. Lots of companies were working towards building the best devices to do so.

All of the elements of the "unique combination" CSIRO proffered in court as a breakthrough weren't merely old by tech standards, they were *decades* old. "Multicarrier modulation," used in WiFi as OFDM, was described as early as the 1950s. Papers had been published on interleaving in the 1960s. Forward error correction, Intel's lawyer told the Texas jury, "was used when NASA sent the Mariner mission to Mars in 1968." Harris Semiconductor had actual working products incorporating these techniques by the 1980s and the company was selling its modems to the US military. The lead defense attorney for Intel, Robert Van Nest, even showed one of those Harris modems to the Texas jury during the 2009 case.

"This Harris modem wasn't patented," Van Nest explained. "Of course not. Nobody thought this was a real invention, because interleaving, modulation, and coding had been around for 30 years by the time Harris came up with this." The issue was making great wireless products, Van Nest explained. "The problem wasn't putting these radio technologies together. Everybody had that... The problem was, how do you take something like the Harris modem and turn it into a chip that I can hold in my hand? That's a problem that the CSIRO patent doesn't even address."

The IEEE considered many proposals, ultimately adopting a proposal by Lucent and NTT for 802.11a. Hitoshi Takanashi, CEO of NTT, testified that not only did his company not steal CSIRO's idea back in 1997, he'd never even heard of the organization. Stephen Saltzman, an Intel Capital official testifying at trial, said that outside of

Radiata and its ex-CSIRO employees, engineers didn't take the idea of a brand-new WiFi patent describing CSIRO's techniques that seriously. "Experts in the company who had already shipped products based on OFDM with previous employers explained that a new patent with OFDM doesn't seem credible," he said.

One of O'Sullivan's partners, Australian inventor Terrance Percival, spoke on the stand. He acknowledged his team hadn't invented any of the core elements of its wireless strategy. But he insisted their solution to the "multipath problem"—that is, interference that gets in the way of radio waves indoors—was uniquely successful and speedy.

"We had those concepts, but we had to work out how to glue them together, which is a term we use," Percival said. "There were all these parameters I talked about, that you had to fine tune and adjust to make sure you got the best possible performance out of the system."

The 2009 trial ended after four days of testimony, when the parties settled over the weekend. The jury never reached a verdict.

"Success has many fathers"—the other claims

It's worth noting that CSIRO isn't the only entity looking to get rich off WiFi patents. Despite the extensive, documented history of the IEEE votes and the corresponding decisions that became the 802.11 standards, there are at least ten different companies that have sued claiming to own the WiFi standard in recent years. None of them have produced any actual products.

Two entities that have filed WiFi patent lawsuits are publicly traded Canadian licensing companies (Mosaid and WiLan) while the others are the kind of shell companies commonly derided as "patent trolls." A new entity, Innovatio IP Ventures, is suing coffeeshops and chain motels; the company seeks a few thousand dollars from each in order to escape a WiFi patent suit. Others trolls claiming inventions key to modern WiFi include [WIAV Networks](#), [Optimumpath](#), Pac-ID, Northpeak, [VIA Licensing](#), and [Finoc Design Consulting](#).

"Success has many fathers," Van Nest told the jury in 2009. The slew of lawsuits over the origin of WiFi—a technology that wasn't really invented by anyone in particular—is pushing that aphorism to the limit.

Hometown heroes

For the Australian inventors, perhaps it's just as well that a jury never ruled on the matter. Without ever having sold a WiFi device and without having finally proven their case in court, CSIRO has reaped a \$430 million windfall. The five CSIRO scientists who claim to have invented WiFi are treated as national heroes in Australia. CSIRO's sheer ability to get settlement cash has been translated to the Australian public: WiFi is simply "made in Australia." This outsized claim has never been proven. It hasn't been acknowledged by any of the dozens of tech companies that have created actual WiFi products. It hasn't been recognized by anyone who isn't on CSIRO's payroll or rooting for them from a nationalist perspective.



Among their accolades, the CSIRO wireless team won an ATSE Clunies Ross medal in 2010.

CSIRO

Paying a settlement—even one that costs many millions of dollars—is often the most sensible and conservative course, even for companies that believe in their case. Those companies still face the possibility of a suffering a high jury verdict in an unfamiliar court; sometimes, it seems more practical simply to settle for a known amount. That's what Rich Vasquez believes. He's a Bay Area patent litigator who represented 3Com and three other defendant companies at the 2009 trial. "Most of the WiFi market already settled in the first case, even though my clients thought the evidence was compelling that the CSIRO patent was anticipated and obvious," he said.

In Australia, none of that matters. Lead inventor John O'Sullivan was awarded the Prime Minister's Award for Science in 2009. The Australian government agencies proudly suggest that "nearly a billion people" use his invention every day.

Now that CSIRO has settled with nearly the entire market—and its patent expires next year—the final round of hero stories is being drafted by the Australian press. *The Australian* published a glowing story on Tuesday describing how "CSIRO's stars won the WiFi battle," complete with a quote from the nation's Science Minister, Chris Evans. He said: "While we always celebrate Cathy Freeman, or other sports stars, it's time we celebrated Australian scientists."

"It's hard to imagine an Australian-invented technology that has had a greater impact on the way we live and work," Evans told The Sun-Herald.

Similarly, it's hard to imagine a set of lawsuits that have had quite the impact of CSIRO's. While many others have made millions from patent claims, the CSIRO cases seem to have thrown history itself into doubt. A ubiquitous technology that exists because of standards—because of widespread cooperation, essentially—has been re-cast as a story of noble group of hero-inventors, ahead of their time, overcoming the non-believers in court. Even if the winner this time is one of the "good guys," one has to wonder about the next time.

Update: Readers have asked about whether we contacted CSIRO for this story; we did. CSIRO did not respond.

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