MIT researchers propose a means to triple wifi data speeds while doubling signal range and ease increasingly congested wireless networks-- MegaMIMO 2.0, a system able to eliminate signal interference.

The technology uses a processor, real-time baseband processing system and a transceiver board to vary the frequency range of wifi signals within the required spectrum. This allows multiple independent transmitters to transmit data on the same spectrum to multiple independent receivers, without signals interfering with each other.

“In today’s wireless world, you can’t solve spectrum crunch by throwing more transmitters at the problem, because they will all still be interfering with one another,” the researchers say. “The answer is to have all those access points work with each other simultaneously to efficiently use the available spectrum.”

As the name suggests, MegaMIMO 2.0 is an update on a previous technology, MegaMIMO 1.0. The first version required users to actively provide explicit channel feedback about different frequencies, a process the sequel handles all by itself.

The researchers say the technology can find application in areas with high wifi usage, such as concerts, conventions and sporting events. It can also be applied to cellular networks, helping solve congestion issues for users actually wanting to use their phones to make calls. An expanded version of MegaMIMO 2.0 will also be able to coordinate "dozens" of routers simultaneously, allowing for even faster data transfer speeds.

Currently MegaMIMO 2.0 involves custom hardware, but the team behind it says it is "soon-to-be-commercialised," possibly allowing for integration with existing routers.

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