NTT demos 802.11ac - next generation high-speed WiFi

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(PhysOrg.com) -- Nippon Telegraph and Telephone Corporation (NTT) has demonstrated what might be the next version of high speed WiFi. Currently named 802.11ac, (wireless transmission traditionally uses .11 as opposed to .3 for Ethernet, or cable based transmission) the new proposed standard was shown to deliver 120Mbps throughput to three receivers at the same time.

The new standard uses the same 5GHz bandwidth as is currently used now in home WiFi systems; to get it to carry more data, the signal is multiplexed (sent out as round-robin bits of data from several different sources) on one end, and then de-multiplexed on the other, all using multiple-user Multiple Input Multiple Output (MIMO) technology that in this case has been developed by NTT. The object is to get 1 Gbps per system, a rate that will be needed as bandwidth hogging applications such as ever higher video resolution or 3D content creates demand for ever faster LAN systems able to deliver such huge amounts of data to always hungry-for-more, customers.

In the NTT demo at the Wireless Technology Park, in Yokohama, six antennas were used to deliver the signal, and three to receive it. The new technology developed by NTT relies on a Field Programmable Gate Array (FPGA) that utilizes mathematical algorithms to set space divisions for the data as its being multiplexed into its individual parts, and then of course to do the reverse on the other end. According to NTT, this processing could be done with a dedicated chip, instead of the FPGA, should the new standard be approved by the International IEEE

standards body.

Even if all goes according to plan, though, the new standard isn't likely to be adopted until at least 2013, though that doesn't necessarily mean products won't ship before that date that utilize the proposed new standard, as was done with earlier wireless standards. Also helpful is the fact that 802.11ac, whatever its final form, will offer full backwards compatibility with the current version, meaning early adopters won't do any worse than what they have now, and likely will do much better as new hardware comes available.

Looking ahead past 802.11ac, the next generation of wireless LAN technology, initially dubbed 802.11ag is expected to step outside of the 5GHz currently unlicensed space, and to shoot for a tenfold gain in throughput.