

## ADAPTIVE ANTENNA OF NEW TYPE FOR MOBILE NETWORKS



*"I really liked this technique and would love to see in practice how much is improved."*

John Glossner,  
General Program Chair,  
Wireless Innovation Conference SDR'11,  
Washington, DC, 2011

### TECHNOLOGY

#### Digital active phased array with adaptive multiuser beam-free algorithm

Such antenna does not use beams for the space division. Instead the antenna elements receive signals from all directions and a special mathematical algorithm selects desired signals with the best signal-to-noise ratio. Such technology is more efficient than the traditional beam forming. It allows operating with more users in the same time-frequency slot and improving radio channel quality.

### THE MAIN ADVANTAGES

- ✓ **Increase in the network capacity**  
Antenna provides a few uplink and downlink simultaneous streams over the same frequency channel without transmission speed reducing (for example, 6-element antenna provides up to 6 simultaneous full speed streams).
- ✓ **Higher communication quality**
- ✓ **Extended coverage area**  
Extended coverage reduces the number of the base stations resulting in the lower capital and operating expenses, and higher profitability.
- ✓ **Substantial increase in the efficiency of frequency resource utilization**

### SUMMARY

The cost of the network based on the proposed beam-free antenna is 2-4 times lower in comparison with the network based on the traditional sector antennas. Operating expenses decrease up to 50-70%.

### OUR PARTNER

Our partner is [Mobile TeleSystems \(MTS\)](#), one of the biggest mobile operators in Russia.

**Video presentation:** [http://youtu.be/\\_5R3aBQPm00](http://youtu.be/_5R3aBQPm00)

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