# The Quality Increasing Of Information Transmission Over The Cellular-Radio Systems

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*Abstract* – **This article provides the exploring of the quality increasing of information transmission over the cellular-radio systems using the MIMO (Multiple Input Multiple Output) technology.**

*Keywords* – **MIMO, 802.11n.**

## I. INTRODUCTION

The modern cellular-radio systems' designing are aimed at fulfilling the 4G technology requirements. Therefore, the new technical solutions are being developed and implemented. The MIMO technology, which is already used in 802.11n, mobile WiMAX and LTE standards, belongs to such solutions.

The MIMO technology implies many antennas for transmission and receiving signals on the transmitted and receiving sides respectively. It increases both, the top and the average speed of the data transmission, the throughput of the antenna devices in the broadband wireless networks, especially in a line-of-sight coverage.

## II. MAIN BODY

Multielement antenna devices provide the covering area enhancement and "dead" zones smoothing, permit the various ways of signal spreading that increase the data delivery speed, the throughput increasing by different physical channels creating. The space separation improves the absolute sensitivity, but doesn't provide the space multiplexing.

According to MIMO advantages, which structure is shown on fig.1, in 802.11n standard, the networks are becoming more efficient. The throughput of wireless networks is increasing, that provides the huge amount of data transmission. The 40-MHz channels, MIMO and data packets aggregation allow to get the maximal data speed.

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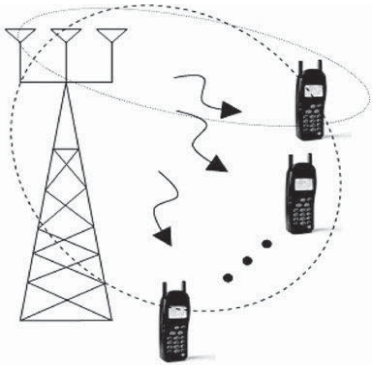

Fig. 1 MIMO-system's structure

The efficient data transmission for the real time applications, that are sensitive to the data transmission delay, is fulfilled in MIMO by decreasing of the re-sent packets amount, decreasing the delay time in the channel.

The compatibility problem with devices of earlier standards 802.11 a/b/g is solved in 802.11n, this standard is compatible with clients' adapters 802.11 a/b/g. The 802.11 a/b/g clients receive advantages of 802.11n's security and predictability.

## III. CONCLUSION

There were explored the perspectives of MIMO technology usage in modern cellular-radio systems, its advantages and benefits. MIMO utilization allows also to satisfy the needs and expectations of the wireless networks' clients.

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