

TABLE III
EXPERIMENT RESULTS WITHIN BAD LINK (AVERAGE)

Buffer size, MB	Asynchronous implementation, s	Std. deviation	Synchronous implementation, s	Std. deviation
10	0,250000	0,000033	1,000000	0,000011
100	0,250406	0,000011	1,000512	0,000008
500	0,250415	0,000011	1,000513	0,000006
1000	0,330370	0,252299	1,000515	0,000009

VI. CONCLUSION

There is a need of reliable and fast point-to-multipoint data delivery, especially on the side of huge content distributors. And there is also a lack of new ideas regarding such kind of data transmission. Thus, design of multi-destination protocol, which is aimed to correspond contemporary data delivery requirements and to be able to effectively utilize the available hardware resources is in demand. Connection establishment process of such protocol requires attention as it is the fundamental function of the data transmission.

Designing the handshake operation, two approaches were developed and compared, synchronous and asynchronous one. The asynchronous handshake implementation demonstrated much effective work, especially within the links with good parameters, which are widely used over the world, for example link from [Sergii Ma2]Berlin to Moscow or from Madrid to Tokyo . This approach has the only drawback that it has some overhead on resources utilization due to inter-thread communication, but it is insignificant for contemporary systems which are required for RMDT.

VII. FURTHER WORK

The further work on the protocol will be focused on implementation of the rest necessary features, namely congestion control based on the Available Bandwidth Control (ABC) [7] and finalize the session management to isolate the recipients with different throughput. And much further work will be aimed on inspection of the security issues, because for now the security of the protocol completely relies on the security aspects of underlying UDP. Besides, there is a research can be performed on the security issues of the connection establishment, for which the experience of the TCP with IP-spoofing can be used to prevent similar attacks.

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