## **ABSTRACT**

The diploma work consists of 76 pages, 29 figures, 5 tables, 19 references

The purpose of this work is to analyze the development and implementation of 5G. As well as analysis of synchronization issues in next-generation networks.

The current state of development of telecommunications is characterized by a rapid transition from LTE to 5G technology. An important factor in supporting the requirements of 5G is the synchronization of all network nodes.

Keywords: LTE, 5G, transport network, SyncE, PTP, clock network synchronization.