

1. PURPOSE AND TASK OF THE TERM PAPER

Mastering the fundamental knowledge of local computer networks and obtaining skills in a computer network synthesis of data transmission system is aimed at the term paper execution. The task of the term paper is to study and to master computer network DATS synthesis process which includes the following stages:

1. DATS structure design.
2. Determination of coordinates of DATS elements location.
3. Calculation of the optimal DATS equipment configuration.
4. DATS costing.

2. INITIAL DATA AND EXECUTION ORDER OF THE TERM PAPER

DATS, which must be designed, consists of: sources of information (SI), hubs, communication channels and central computers. In this case, the main purpose of hubs is to receive data from SI through low-speed and medium-speed communication channels with their further transmission through high-speed communication channels to a central computer. The number and coordinates of sources of information, types of possible equipment for every SI, equipment cost in network segments and operational expenses for data transmission for a period of 300 days are given as initial data for DATS design.

Initial data is given in the tables below:

1. Coordinates of SI, transmitted information volume (table 1);
2. Types of equipment, their bandwidth and cost (table 2);
3. The communication channels lease cost per time unit (table 3).

Table 1

Sources of information

Number of SI	Coordinates of SI, km		Information volume Kbytes
	X	Y	
1	0	0	460
2	20	0	360
3	40	0	200
4	60	0	240
5	80	0	500
6	100	0	800
7	0	20	1200
8	20	20	860
9	40	20	580
10	60	20	140
11	80	20	580
12	100	20	860
13	0	40	1200
14	20	40	800
15	40	40	500
16	60	40	240