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The Process of Decentralized Control and Heat Distribution

Control automation is the most effective facilitator in the reliability of the improvement and efficiency of different objects. Modern technology has made considerable progress, but automatic heating systems have not sufficiently been widespread and developed. They have not even adopted the special use of microprocessor control.

Traditionally, automated control systems of technological processes are built and continue to be built on the basis of a centralized control. In such systems big information flows from information generator (objects, processes) are sent to the centre to be processed, analyzed and sent back to the object in the form of control responses. This structure plays a positive role at the conceptual stages.

However, systems should work in a rigid real-time mode. Today, structural rigidity of the centralized system has generated a number of problems preventing from implementing its functions in a proper way. The decentralized approach to control technological objects usually results in a problem of distributing limited resources. Being involved in technological processes these devices could be also used for other practical uses at the same time or could make assistance to solve a number of additional problems arisen while fulfilling these tasks.

Much attention will be devoted to making research of possibility to use decentralized control approach while creating the automated systems to control heating. Currently, decentralized systems are becoming more popular on the world market in contrast to centralized control. They are perfect for use in commercial, industrial areas and are public objects that are now required for infrastructure development in our country. While using the decentralized approach in the management heating systems, the following advantages can be observed:

1. Opportunity to maintain comfortable environment in the apartments having such feature in comparison with apartments still using central heating;
2. Absence of necessity to acquire parcels of land for plotting heating systems and boiler;
3. Full automation where various regimes can be chosen;
4. Significant decrease of the costs needed for maintenance and repair.

Thus, the development of such a system should be a task for modern automation. This automated system should decide several problems because it is based on a modern microprocessor technology. Its implementation should provide high accuracy of the control system parameters and gradual adjustment of current parameters to ensure normal working conditions and life activity. The economic effect should be achieved through energy savings as a result of its efficient use of the system.