

## HEAT-SUPPLY NETWORK DISPATCHING SYSTEM

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The city municipal network consists of heating, natural gas supply, water supply, etc. Automatization and scientific track are the inevitable trend of city management. We can use information technologies to improve the city municipal integrated service management level and make the management of municipal administration better.

As example consider one of the information systems for heating distribution. Heat-supply Network Dispatching System ((HNDS) is based on Geographical Information System (GIS).

GIS is a space information system set up for specifically applied goal, it can pretreatment, input, store, search and query, analyze, display, upgrade and offer the technological for space data based on computer hardware, software and network.

GIS is a new developing disciplines involved computer, geography, surveying remote sensing, environmental, urban science, space theory, management and relevant disciplines, by unified managing the space position, character and time realm correlated with geographical information, organizing and using geographical information according to a kind of new way.

Because GIS possess the powerful functions of managing and analyzing space data, it is extensive being applied to the urban comprehensive pipeline management.

HNDS uses the relief map and combines the information of inspect equipment with situation of heat-supply network, intuitionistic displays the state of inspect equipment and estate of heat-supply network.

Using the models of forecast and analysis, the system fulfills reasonable configure for each tache of heating supply dispatching.

HSNDS is a compositive system based on client/server framework, its software and hardware environment. Server part of this system consists of two servers, one service for GIS to manage data of map and attribute, another service for databases. Client part needs disposal data and calculates it.

HNDS can be divided into engineering operation, inquire and statistic, calculate initialization, operation hydraulic regime analyzing, emergency regime analysis and dealing with, real-time data monitoring.

The engineering operation module can carry out flowing functions, such as loading, closing, saving, display usage and display content of Engineering of heat-supply network.

Through using the module of showing the single pipe network can show the single scene of heating pipe network.

For multiple source heating supply enterprise, it can show a certain hot water or steam network of the designate source.

The operation hydraulic regime analyzing subsystem can utilize all kinds of pipe network data gathered in real time and the existing topological data of network,

design parameters to carry on operation hydraulic regime analyzing of the heating supply network,

show the results of analyzing by way of report form and pressure diagram,

afford the dispatching schemes of heat source, valve, pipe network and pump under different operating conditions,

carry on computational analysis for some kinds of modes of hot water heat-supply systems centralized regulation, for example constant flow control, variable flow control and centralized control with flow variable by steps, draw temperature adjustment curve.

The subsystem of Real-time Data Monitoring can gather long-distance information of each monitoring point of the pipe network, judge and store the real-time data of pipe network state accepting, show the real-time operation conditions of each monitoring point of the pipe network in the form of chart and curve.

The HNDS software based on GIS technology is comprehensive platform software, it combines geographical information with many kinds of technology, such as data monitoring, load forecast, emergency regime dealing with and operation hydraulic regime analyzing, etc.

The software uses the computer information technology, communication technology and modernly predicts technology, offers a kind of advanced scientific operation management tool to the heat-supply trade, it improves the operation decision level of the heat-supplying to the maximum extent.