

Tanachon Nualsriphai 2010: Fire Alarm System via Local Area Network ; LAN. Master of Engineering ( Fire Protection Engineering), Major Field: Fire Protection Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Dr. Saeree Svetasreni, Ph.D. 144 pages.

Fire Alarm Signal via Local Area Network (LAN) combined two communication system technologies which provided more effective fire alarm and signal transmission. This system was designed to cover all working plant areas in CP Plastic Business Unit of Rayong Plant at 111/1 moo 2 Tambol Nikompattana Amphur Nikompattana Rayong. Theory and hypothesis of this study were assumed that the system should send fire alarm signal from Fire Alarm Control Panel of each factory via LAN system to be processed by a server computer and then inform to persons in charge. The system consisted of 3 processes as 1. Fire Alarm signal transmission via LAN system. 2. Design a fire alarm system for processing and controlling. 3. Signal transmission from LAN to LED.

Transmitting of fire alarm signal from Fire Alarm control Panel could be carried out by checking electrical voltage of the fire alarm control panel by Multi Meter. 9-12 volt was detected at the occurrence of fire alarm, while 0 volt was detected at normal case when there was no fire alarm. This voltage value depends on a design of each brand of fire alarm system. This voltage was then connected to a transistor and would be operated as an on/off switch, called Encoder. The signal will then be processed by a developed program, using C language, and transmit a signal to converter where the signal was converted from TCP/IP to RS 232. The signal was reliably transmitted via LAN to Hub and then to a server. The computer program was designed and developed by using Delphi 6 which is a high level language, can handle data base and follows a Structure Programming framework, After finishing the process, the system transmitted a signal in real time via LAN to be shown on client computer screen. Moreover, it was able to convert a signal to voice as well as LED and be shown on Graphic Annunciator by using the equipment called Receiver.

The result concluded that the system was able to accurately transmit fire alarm signal via LAN. It correctly showed alarm zones and alerted both by voice and LED in real time. Finally, client users could also view details of fire alarm at their computer screen.

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Student's signature

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Thesis Advisor's signature