ABSTRACT

Supervisory Control And Data Acquisition (SCADA) is a computer-based industrial control system that is used to do monitoring and controlling processes of an industrial process in a company. SCADA is the result of the integration of automation components, Human Machine Interface (HMI), and data acquisition system.

Today, SCADA in manufacturing industry is still implemented as a standalone system which every single production area plant is monitored and controlled by a SCADA system which does not have an integrated system in each area of the plant. The use of standalone SCADA will lead to copy tagname in each plant which will result in license fees. The license fee will increase along with the amount tagname being used, furthermore using too much tagname will also lead to duplication tagname causing error on existing systems.

This research will design a SCADA system based on client / server using software Industrial Application Server (IAS) so that with the SCADA system based on client / server can be the solution to resolve the problem in standalone SCADA. In designing the system, begins with understanding the existing production process of pasteurization plant, bottling plant, labeling plant, and checking plant as a case study, the production system plant will be simulated by mixing plant, basic electric plant, basic pneumatic plant and advanced electric plant. Scenario continued with the design and configuration of IAS. By designing SCADA system based on client server solutions using IAS can be the solution in standalone SCADA system.

The result of this research is a SCADA system based on client / server using IAS which successfully designed. Utilization of Industrial Application Server software (IAS) can reduce the number of tagname up to 30% so this will reduce the cost of licenses to be issued in the design of SCADA. In SCADA systems based on client / server, the operator can monitor and control the system by decentralized or centralized. In addition monitoring and controlling processes centrally, the operator can also perform maintenance on computer servers centrally. Reporting to the SCADA system based on client / server can also be done in a centralized or decentralized.

Keyword: Supervisory Control and Data Acquisition (SCADA), Industrial Application Server (IAS), Standalone, Client Server.