## ABSTRACT

Today, communication technology is currently growing very rapidly. Jeis communication tool very loved now is a smartphone. Android-based smartphones now very common and very cheap. As the development of mobile technology smartphones, mobile smartphone can function as HMI SCADA system. Among them is the small physical form and can be accessed through the Internet. The development of the current control system toward the communication between the controller with controller which can be reached through the Internet. By utilizing the Internet, a plant can be controlled from great distances and even cross-country.

Final research is done by building a simple SCADA system using the Arduino microcontroller board as a controller and Android phones as HMI. Arduino is applied as the controller and interface between sensors and actuators. Arduino will read the value of sensor LM35 (temperature) and current sensors (ACS712). Application on an Android phone is used for monitoring the sensors and controlling the value of the on / off power supply and control of digital and analog output pin of the Arduino. SCADA system platform which is made applicable to a Local Area Network (LAN) and Wide Area Network (WAN) ...

From the research conducted, the success of HMI program on android in controlling the Arduino microcontroller. On the LAN testing, achieving 100% success with an average delay loop 0.0094 s - 0.01337 s. While the WAN testing, the success reached 99.90% with an average delay loop 0.00871 s - 0.01334 s. On testing tools, current sensors successfully transmit data amount of voltage and current magnitude to android smartphone. From these tests, it can be concluded that have WAN Traffic higher than the LAN

Keywords: SCADA, HMI, Android, and Arduino, LAN, WAN