***Abstract***

*The best quality of every product as the result of production is a wanted goal of producer. In this case, process of identification anomaly in the product material part can decide it is broken or not. One of anomaly indicators can be seen by its material physical parameters irregularities. In this research, an irregularities of resistivity distribution of a material is used as an anomaly indicator. Electrical Impedance Tomography is one of some methods that can be used, where in EIT requires much measurement data so manual measurement is hard to do, so it needs a potential data acquisition devices that fast and real time. Data acquisition process did by object edge potential data retrieval device that has 16 probe with boundary potential and combined with influx injection to the electrode 16 times, so that 256 data must be obtained quickly for various methods of data collection systems. These 256 data is collected by microcontroller device with GUI interface and automatically can be saved in database. This data collection system can count 16 probe nodes object boundary for one influx injection in electrode quickly, with level of accuracy (error) on ground object (test sample) for adjacent method is 17.7%, opposite method 18.3%, and 8.42% for cross method for homogeneous object measurement, then the measurement is done on the object by providing anomaly in block of wood to test measurement sensitivity. The output of this research is expected can produce a device that help in the process of boundary potential data collection in identification system using EIT method.*

***Keywords :*** *irregularities of electric resistivity, EIT, data acquisition, interface, real time.*