

DEVELOPMENT OF MEASURING INSTRUMENTS FOR THE MEASUREMENT OF VHF AND UHF ANTENNA PARAMETERS

by Eko Marpanaji, Muhammad Izzuddin Mahali

ABSTRACT

Antenna is a very important component in building wireless telecommunications systems especially for radio communication systems. Antennas play an important role in conducting electromagnetic wave radiation into the air (for the transmitter) and receiving electromagnetic waves (for the receiver). This study studies alternative solutions related to components used in the development of antenna parameter measuring devices so that a measuring instrument is obtained that is more affordable and can be used to meet the needs of laboratory equipment as a measurement tool when measuring antenna parameters and as well as learning media.

This study aims to develop the VHF and UHF Antenna Parameter Measuring Instruments and to test the accuracy of the developed VHF and UHF Antenna Parameter Measuring Devices.

This research is designed for a multi-year scheme, which is for 2 years. For the first year the target to be achieved is product development with a focus on (a) quality analysis (b) design (c) development and (d) Testing. The chosen development method is the Rational Unified Process (RUP), where the risks and errors found will be corrected in several iterations so as to produce a good architecture and high-quality application. RUP consists of several stages, namely Inception, Elaboration, Construction, and Transition. At each stage in the RUP iterates business process modeling, requirements, analysis & design, implementation, testing, deployment, configuration & change management, project management, and environment. This research has resulted in a prototype of RF Antenna signal data acquisition using Arduino and PC or Laptop along with requirements analysis, design, and test results documents.

Kata Kunci: *data acquisition, radiation pattern, antenna, antenna parameters*