

NOVEL PREDICTION USING FMADM ALGORITHM AND METEOROLOGICAL DATA FOR EWS

by MUSLIKHIN, FATCHUL ARIFIN, PONCO WALI PRANOTO

ABSTRACT

An early warning system (EWS) has the possibility to predict data accurately in the limited positions of units using sensors and additional data input. This applies in the configuration of the addition of data input, where data from sensors and meteorological data is required to accurately predict floods. The purpose of this system is to make decisions and determine the time of flooding. In order to achieve this goal, decision support system (DSS) techniques with sensor data input and meteorological data are applied. First, the data is inputted from the sensor mounted on the buoy to get the real water level of the river. Then, the desired sensor data and meteorological data are quantized using FMADM algorithms. After that, based on the weights, the model is normalized to find optimal predictive results. Finally, optimal predictions can be sent to the EWS and forwarded to the public through internet and GSM networks. The EWS features sirens, short messages, websites, and also Android apps to provide monitoring and prediction information. The experiment was carried out using EWS hardware mounted on streams and the results indicated the good performance of the system with fulfill errors.

Kata Kunci: *flood predicting, FMADM, DSS, meteorological data, early warning system*