ABSTRACT

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IMPLEMENTATION OF ALTERNATIVE FEATURES SELECTION IN CUSTOM ROM FOR ANDROID USING ANALYTIC NETWORK PROCESS (ANP)

(xvi + 79 pages; 28 figures; 55 tables)

The features selection to develop a custom ROM (Read Only Memory) for Android has always been a challenge for developer. To aid developers in determining the features. Software Product Line Engineering (SPLE) is one of the solution to aid this problem. One of the SPLE method can help to determine which features that have the highest likelihood, based on the relationship between the factors that influence the selection of the alternative features. This method was Analytic Network Process (ANP), a general theory of relative measurements used to derive composite priority ratio scales from individual ratio scales that represent relative measurements of the influence of elements that interact with respect to control criteria.

ANP method has several steps in the process. The first step is to determine the goals and elements of the criteria and alternatives. The next step is to make a decision model of goal, criteria and alternatives along with the elements of each cluster (criteria and alternatives). The next one is to make the pairwise comparison matrix and feedback among each cluster based on the relationships that exist in decision models. Then after all the matrices has been finished, all of the matrix will be integrated into an initial supermatrix. The initial supermatrix will be converted into a weighted supermatrix, and the final stage is to calculate limit supermatrix from this supermatrix, which is followed by analyzing the results from these calculations.

The results from calculation of ANP on the selection of features on this Android custom ROM is the priority of alternative features which were: Root (0.1441), WiFi Direct (0.1052), Firewall (0.0957), S Voice (0.0846), S Beam (0.0755), VPN (0.0741), Theme (0.0564), Secondary Display (0.0491), Smart Stay (0.0443), Display Equalizer (0.0372), Lockscreen Widget (0.0364), Bravia Engine (0.0354), Face and Voice Unlock (0.0348), Multiple User (0.0280), Stamina Mode (0.0741), Daydream (0.0226), USB Audio (0.0180), Smart Alert (0.0177) and Direct Call (0.0147).