Seamless Handoff using Electre III and Promethee Methods

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Abstract

Communication in mobility without interruptions has become a challenge these days. Mobile devices progressing in remote areas will expect low signal levels and sometimes no signal. If a mobile node’s service provider coverage doesn’t support for long ranges, then it shifts to a new base station. So then a handoff occurs. If the same networks base station is available then there is no bar to continue with the same network. If it has to opt for other networks, different types of criterions have to be considered. In this paper, two Multiple Attribute Decision Making (MADM) methods has been employed and recognized as ELECTRE III and PROMETHEE methods which contrive the networks based on criterion performances for handoff decision. The main objective is to reduce the unwanted handoff and to reduce the handoff failures. Evaluation of alternatives such as GSM, EDGE and CDMA has been processed. ELECTRE III method has been exploited as the construction of Concordance, Discordance and Credibility index. Criteria such as Data rate, Packet Loss, Speed, Bandwidth, Signal and Jitter has been discussed. PROMETHEE method utilizes preference function and plots GAIA plane to easy perceptive of network behaviors. The comparison of ELECTRE III and
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PROMETHEE methods resulted in superior interpretation of MADM methods.

References


Index Terms

Computer Science
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Keywords

Concordance, Credibility, Discordance, ELECTRE III, GAIA, Preference function, PROMETHEE, Vertical Handoff.