UNIVERSITI TEKNOLOGI MARA

MULTISYSTEM INTER-CLUSTER CELL RESELECTION FAILURE ANALYSIS FOR TERRESTRIAL TRUNKED RADIO (TETRA) NETWORK

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ABSTRACT

The concept of seamless communication using a single technology is one of the key motivations behind the Terrestrial Trunked Radio (TETRA) standard. By moving towards a single technology, government is capable to procure a single nationwide communication infrastructure, substituting the proprietary existing system. Bidding for such a system on nationwide scale would drive value for money. Terminal interoperability with any network would ensure strong competition, driving up functionality and lowering costs to end-users. This paper focuses on the cell reselection failure analysis based on measurement of Radio Frequency (RF) data due to implementation of multisystem inter-cluster system to meet the needs of mission critical end-user organisation for increasing their operational capabilities and effectiveness. Methodologies used in this research are collection and analysis of RF measurement data using ARTEMIS tools. Another tool being used is ATDI which is to present the coverage prediction. Based on the analysis result, execution of the cell-re-clustering has successfully implemented and the post processing result has been validated to prove the effectiveness of the activity. The outcome of this study can be used to provide a better design concept on handover or cell reselection in multisystem inter-cluster of TETRA network thus reduce the drop call problem and improves the network key performance indicator.

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