

Chapter 8

Conclusion

8.1 Summary

The results indicate that the proposed method in the positioning layer (Reference: section 1.5.3) is able to assist to create a meaningful user context model for the selection of the characteristics of Location Based Services, at various propagation conditions defined by both 3GPP and WINNER propagation scenarios (up to a maximum speed of 120 kmh) as a passive method only requiring a network trace, and without a an integrated sensor onboard cellular phone or any other wearable sensor device, that is: with less modifications to the all applicable mobile transceivers to WCDMA.



8.2 Future Work

The computational burden associated with the Baum-Welch algorithm is quite higher for longer error vectors, since the forward and backward variables are computed for each symbol and convergence is observed to be slower. Sivaprakasam and Shanmugan [38] have showed that under some assumptions, a markov model with an arbitrary transition matrix is equivalent to a markov model with a unique block diagonal transition matrix and presented a computationally efficient algorithm for estimation transition matrix from a set of observations called modified Baum-Welch algorithm. However they have shown the particular algorithm is computationally efficient when the overall bit error rate for the source is small and the error sequence contains long stretches of identical symbols [38]. The utilization of modified Baum-Welch algorithm might accelerate the real time execution of proposed methodology.

Further to above the conclusions by Andrea J. Goldsmith and Larry J. Greenstein in [39] have stated that the short term fluctuation statistics of signal attenuation, for LOS(NLOS)


regions of a microcell are Rice-like(Rayleigh-like), may be utilized as priori information in further improvement process. For example generation of markov model parameters such as initial state matrix could be based on either of the models as per the situation.

Finally let me conclude quoting K W Richardson [40], who states: 'the range of 3G services will truly only be limited by the imagination of the service provider', unquote.



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