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**Comments on “Priority Oriented Channel Access for Cellular Systems
Serving Vehicular and Portable Radio Telephones”**

by

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The purpose of this note is to correct several errors that appeared in the original paper [2]. Succinctly, the error propagated from [1] in which equation (34) contains a mathematical error that was called to our attention recently [3]. It stems from the fact that even though the random variables X , and T_j ($j=1,2,\dots,i$) in equation (33) of [1] are statistically independent, the events that define the probability on the right hand side of that equation are NOT independent events. Overlooking this, one is led to an incorrect result, which was presented as equation (34) in [1]. A correct derivation is given in [4].

The error in equation (34), potentially impacts the computation of several of the system performance curves. Using the corrected formula, we have recalculated the performance curves of [1] and have compared them to the original curves that were presented in [1]. In spite of the error, the original curves are only marginally different from the revised curves in the range of parameters that were presented. Because of this we believe that the impact of the error on the performance curves presented in [2] is also marginal. A revised version of [1] is available as Technical Report No. 773, in the College of Engineering and Applied Sciences of the State University of New York, Stony Brook, NY 11794, USA [4].

The major result of this error is that equation (20) of paper [2] should read as follows:

$$P_{fh|k} = \frac{(k+1)\mu_Q}{C\mu_H + (k+1)\mu_Q}$$

Additional typographical errors appear in [2]. In particular, the graphics associated with Figures 5 and 6 were interchanged. Note that the captions, numbering and pointers in the text of [2] are correct. However, the graphic associated with Figure 5 (on p. 345) showing a circle with an inscribed triangle actually belongs to Figure 6 (on p. 346). The graphic associated with Figure 6 (on p. 346) showing a circle and hexagon actually belongs to Figure 5 (on p. 345). Finally in Figure 4 (on p. 344) the parameters at the bottom should read $C_h = 0$, $C_v = 1$.

We regret any inconvenience these errors may have caused.

References

- [1] D. Hong and S.S. Rappaport, "Traffic Model and Performance Analysis for Cellular Mobile Radio Telephone Systems with Prioritized and Nonprioritized Handoff Procedures," IEEE Trans. on Vehicular Technology, Aug. 1986, vol. VT- 35, no. 3, pp. 77-92.
- [2] D. Hong and S.S. Rappaport, "Priority Oriented Channel Access for Cellular Systems Serving Vehicular and Portable Radio Telephones," IEE Proceedings (UK), Part I, Communications, Speech and Vision, Oct. 1989, vol. 136, no. 5, pp. 339-346.
- [3] Joan Borrás and Roy Yates, private communication, December 16, 1998.
- [4] D. Hong and S.S. Rappaport, "Traffic Model and Performance Analysis for Cellular Mobile Radio Telephone Systems with Prioritized and Nonprioritized Handoff Procedures – Version 2," CEAS Technical Report No. 773, June 1, 1999, College of Engineering and Applied Sciences, State University of New York, Stony Brook, NY 11794, USA. See also: IEEE Trans. on Vehicular Technology, Aug. 1986, vol. VT- 35, no. 3, pp. 77-92.