Project	IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>
	Comments Regarding Contribution C802.16maint-06/072
Date Submitted	2006-09-26
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Re:	Proposed resolution in C802.16maint-06/072
Abstract	
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Comments Regarding Contribution C802.16maint-06/072

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While the problem presented in the contribution is valid, the proposed solution is far from optimal (compared to the corresponding first order Kalman filter).

When the measurements are not uniformly sampled in time, the standard IIR formula

$$\hat{\mu}_k = (1-\alpha)\hat{\mu}_{k-1} + \alpha \mathrm{CINR}_k \tag{1}$$

lacks optimality. However, the proposed formula

$$\hat{\mu}_k = (1-\alpha^n)\hat{\mu}_{k-1} + [1-(1-\alpha)^n]\mathrm{CINR}_k, \quad \text{for } k > 0, \tag{2}$$

where n is the number of frames in which no measurement was taken, is not valid as well.

This is due to the fact that (2) implies that after n frames without measurements, only one gain will be different from (1). We argue that Kalman filtering theory implies that the gain should decay exponentially after no-measurements frames. The proposed gain and the exponential gain sequences are given in Fig. 1.

Thus, we propose to defer and harmonize to achieve a correct solution.

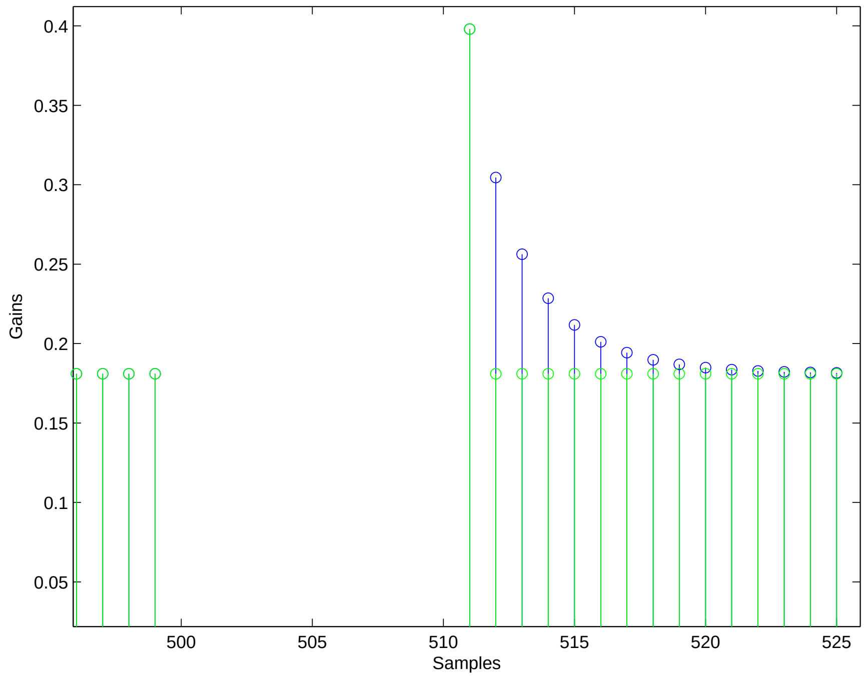

Figure 1: The proposed gain sequence (Green) Vs. the exponential Kalman gain sequence (Blue)