

Project	IEEE 802.20 Working Group on Mobile Broadband Wireless Access < http://grouper.ieee.org/groups/802/20/ >	
Title	F-SSCH Performance	
Date Submitted	2006-05-05	
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Re:	IEEE 802.20 session #20, May, 2006	
Abstract	At the request of 802.20 Technical Editor, this contribution documents performance results for the Forward-Shared Signaling Channel (F-SSCH) to demonstrate that the specified mechanisms are sufficient to provide high-speed mobiles with a reliable F-SSCH.	
Purpose	FYI.	
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Introduction

At the request of 802.20 Technical Editor, this contribution documents performance results for the Forward-Shared Signaling Channel (F-SSCH) to demonstrate that the specified mechanisms are sufficient to provide high-speed mobiles with a reliable F-SSCH.

Performance Discussion

Each individual message on the F-SSCH can be power controlled to achieve the required error rates. Fading margin can be provided as needed on fast channels.

Figure 1 illustrates the FER performance of a VehA 120 Km/h mobile with dual Rx diversity, as a function of average SNR, to address the specific concern with regard to high speed mobiles. The performance shown here is for the case of a 48-bit information block encoded at 1b/s/Hz. The F-SSCH is assumed to occupy 48 subcarriers in this simulation. As shown in Figure 1, the required SNR is moderate even for a high speed mobile, and can be achieved using appropriate power control. Hence the F-SSCH reliability is sufficient as specified in the Draft Standard

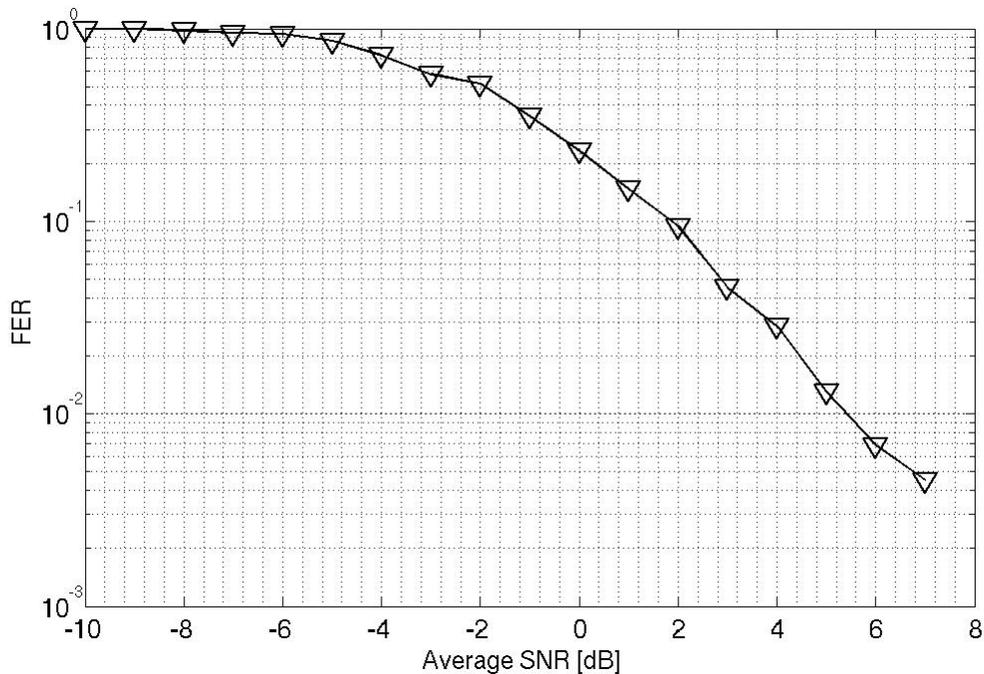


Figure 1 SSCH error performance for VehA 120 km/h.

Finally, a clarification: The draft standard does not specify the reuse scheme to be used by the network, this is implementation specific. In particular, the subbands containing the

SSCH can be placed in reuse, thus mitigating the interference seen by the SSCH. Note that the above simulation does not assume any FFR gains. Thus the performance will improve the situation if FFR is used.