Time acquisition in wavelet -based multicarrier modulation systems

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Abstrak

A multicarrier modulation system based on M-band wavelet modulation consists of a bank of filters satisfying the perfect reconstructed quadradture mirror filter (PR-QMF) theory. The system exploits the localisation properties of the wavelets in time and frequency to develop the transmitted signal that has compact PSD characteristics and resilient in a channel exposed to fading. A timing synchronisation that comprises acquisition using the wavelet properties has been proposed. This paper discusses the analysis and simulation results of the timing aquisition, taking advantage of the wavelet signal correlation properties. The designed acquisition circiut work using the correlation property of wavelet signal which has a unique peak. The proposed wavelet synchroniser shows good performance with the time variance close to the cramer Rao lower bound.