METHOD AND SYSTEM FOR COMMUNICATION IN A MULTIPLE ACCESS NETWORK

ABSTRACT

The present invention relates to improved multiple access communications. In one form, the invention relates to an improved signal processing method and apparatus for an iterative method of determining the reception of a signal in a multi user packet based wireless OFDM (Orthogonal Frequency Division Multiplexing) communication system. In other forms the present invention provides recursive filtering for joint iterative decoding in a variety of systems and functions such as linear multiple access channel decoders, iterative equalisation, iterative joint channel estimation and detection/decoding, iterative space-time processing, iterative multi user interference cancellation and iterative demodulation. In one particular form the present invention provides an iterative decoding circuit for a wireless multiuser communications receiver comprising a first signal processing means for receiving at least one received signal, said first signal processing means comprising at least two linear iterative filters such that the first linear iterative filter provides an estimate of a selected received signal to an estimated signal output and a second linear iterative filter provides estimates of at least one other received signal, delayed by one iteration cycle, to an input of said first linear iterative filter, a second signal processing means for receiving the estimated signal output of the first linear iterative filter and providing a further received signal estimate to the input of the first signal processing means in a succeeding iteration cycle of the decoding circuit.

Fig 19a accompanies the abstract.