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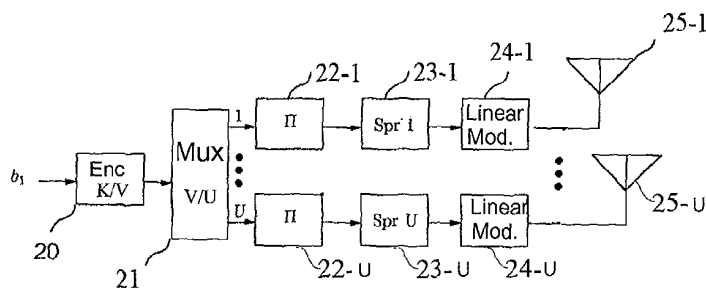
(54) **Transmission and reception diversity process for wireless communications**

(57) A process for transmitting and receiving information through a wireless communication channel comprising the steps of:

- receiving a stream of databits of a given data rate
- applying one unique encoder for creating a set of U substreams of the same data rate than said stream of data bits;
- modulating each of said substreams in accordance with a modulation scheme; and
- transmitting each of said U substreams to one different transmission antennas. Preferably, the U substreams are interleaved and randomly spread-

ed.

In the receiver, the received signal is processed by means of a front-end matched filter in order to generate a first statistics of the said U sub-streams. There is then applied a controllable iterative interference cancellation process in order to suppress ISI and Self-MAI from said first statistics and, for each of the U sub-streams, deinterleaving and applying a parallel to serial processing. The serialized data stream is then input to a decoder, such as a Viterbi decoder, and a feedback loop regenerating U sub-streams is used to control the interference cancellor.



**Fig. 2**

















































