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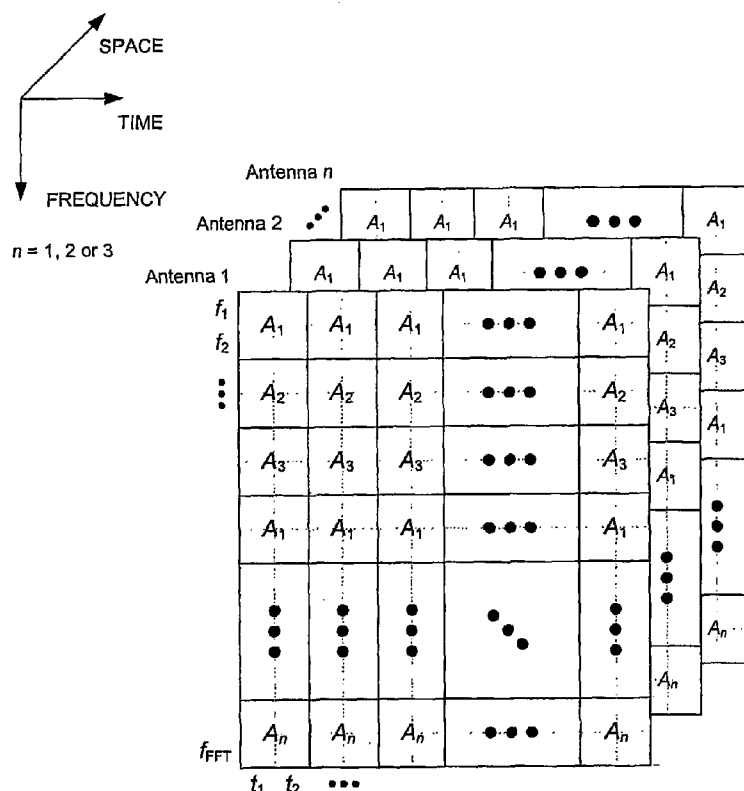
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[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR SPACE-TIME FREQUENCY CODING IN A MULTI-ANTENNA TRANSMISSION SYSTEM



(57) Abstract: A method for space-time-frequency coding pieces of data includes receiving a stream of a plurality of pieces of data in a multi-antenna transmission system, where the data may comprise a stream of orthogonal frequency division multiple access (OFDMA) symbols, orthogonal frequency division multiplexed (OFDM) symbols or the like. The pieces of data are then coded across space, time and frequency dimensions based upon a plurality of space-time-frequency (STF) codes. The pieces of data are coded such that one or more STF codes in the frequency dimension differ from one or more other STF codes in the frequency dimension. In this regard, the frequency dimension can include a plurality of frequency bins such that the pieces of data can be coded in a manner whereby the plurality of STF codes sequentially circulates through sets of at least one frequency bin in the frequency domain.



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