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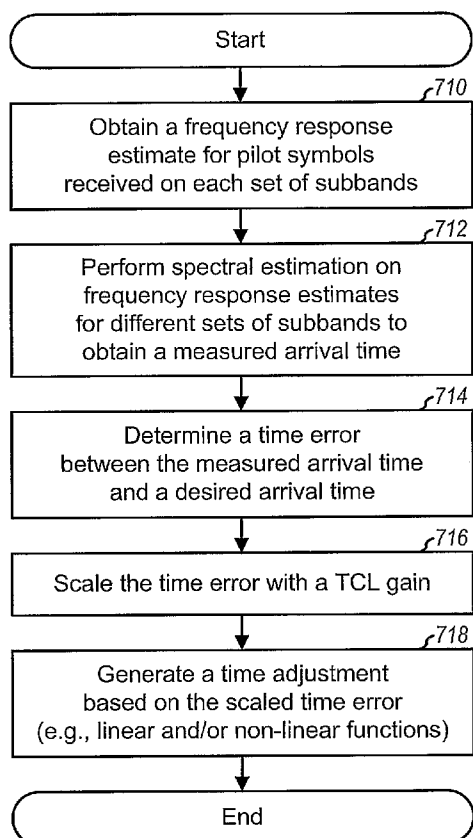
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE,

[Continued on next page]

(54) Title: TIME SYNCHRONIZATION USING SPECTRAL ESTIMATION IN A COMMUNICATION SYSTEM



(57) Abstract: To perform time synchronization using spectral estimation, a receiver obtains a frequency response estimate for pilot symbols received on each set of frequency subbands used for pilot transmission. The receiver performs spectral estimation on frequency response estimates for different sets of subbands to obtain a measured arrival time for a transmission from a transmitter. The spectral estimation determines a dominant frequency component in the frequency response estimates and derives the measured arrival time based on this dominant frequency component. A time error between the measured arrival time and a desired arrival time is computed and possibly filtered. The filtered or unfiltered time error is scaled with a fixed or adjustable gain. A time adjustment is then generated based on the scaled time error and using linear and/or non-linear functions. The time adjustment is sent to the transmitter and used to adjust the transmit timing at the transmitter.



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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

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