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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))*

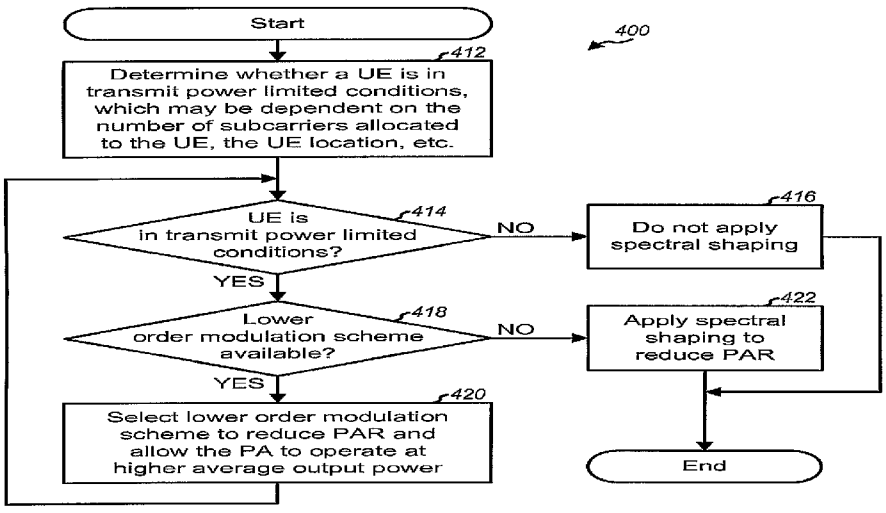
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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(54) **Title:** SPECTRAL SHAPING TO REDUCE PEAK-TO-AVERAGE RATIO IN WIRELESS COMMUNICATION



(57) **Abstract:** Techniques for performing spectral shaping to achieve a desired peak-to- average ratio (PAR) are described. Spectral shaping may be selectively performed for a single-carrier frequency division multiplexing (SC-FDM) signal based on one or more criteria, e.g., in transmit power limited conditions and/or if a modulation scheme with lower PAR is unavailable. At least one parameter of a window function or spectral shaping filter may also be adjusted based on at least one characteristic of the SC-FDM signal. For example, the roll-off of the spectral shaping filter may be adjusted based on the modulation scheme and/or the number of subcarriers used for the SC-FDM signal. A transmitter may perform spectral shaping on modulation symbols, if enabled, to obtain spectrally shaped symbols. Spectral shaping may be performed in the frequency domain either within an allocated bandwidth or with bandwidth expansion. The SC- FDM signal may be generated based on the spectrally shaped symbols.

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