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(54) Process for estimating the channel state in a transmitter of a digital communication system and apparatus for doing the same

(57)

1. Process for determining the channel characteristics in a digital communication system comprising a first Communication Unit (CUA 100) and a second Communication Unit B (200) communicating through a transmission medium (140). The first unit 100 includes a first signal signal processor (110), and at least one first conversion and RF module (120) and a first antenna (130). The second unit (200) includes a second signal processor (170), and at least one second conversion and RF module (160) and at least one second antenna (150). The process comprises the steps of:

- executing a first loop based on the successive transmission of a first training information generated by said first unit (100) and the retransmission of a feedback signal combined with a second training information generated by said second unit (200) back to said first unit (100) in order to let said first unit compute relationship characteristics (P_A,P_B) between the transfer function of said first and second conversion and RF modules (120, 160);
- upon completion of said first loop, executing a second loop for the purpose of continuously deriving the knowledge of the G channel within the emitter of said first Unit (100) from the sole knowledge of the estimated H channel together with said relationship characteristics (P_A,P_B).

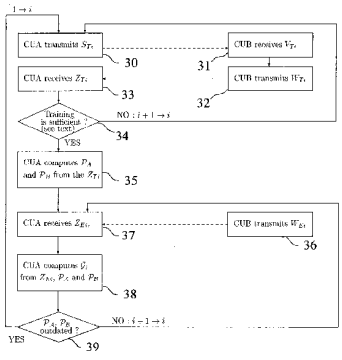

Fig. 3

EP 1 701 466 A1