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(71) Applicant *(for all designated States except US)*: ERICSSON INC. [US/US]; 7001 Development Drive, P.O. Box 13769, Research Triangle Park, NC 27709 (US). ✓

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: HASSAN, Amer [US/US]; 412 Key West Mews, Cary, NC 27513 (US).

(74) Agents: BIGEL, Mitchell, S. et al.; Myers Bigel Sibley & Sajovec, P.O. Box 37428, Raleigh, NC 27627 (US).

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(54) Title: PILOT-SYMBOL-ASSISTED RADIOTELEPHONE COMMUNICATIONS

(57) Abstract

Radiotelephone communications are processed to produce a pilot-symbol-assisted modulation (PSAM) communications symbol sequence, including a plurality of predetermined pilot symbols interleaved with a plurality of information symbols. The PSAM communications symbol sequence is communicated over a radiotelephone communications channel having a transfer characteristic. Pilot symbol data, corresponding to pilot symbols, and information symbol data, corresponding to information symbols, are identified in the sequence of communications symbol data. A data-augmented estimate of the transfer characteristic of the radiotelephone communications channel is generated from the pilot symbol data and the information symbol data. Estimates of information symbols are generated from the corresponding information symbol data and the generated estimate of the transfer characteristic. Estimates of the transfer characteristic are iteratively generated by identifying a group of information symbol data corresponding to a group of information symbols, generating estimates of the group of identified information symbols from the group of information symbol data and a previously generated estimate of the radiotelephone communications channel transfer characteristic, and generating a new estimate of the transfer characteristic from the pilot symbol data, the information symbol data, and previously generated estimates of information symbols.





