

Title (en)
TIMING ADJUSTMENT CONTROL FOR EFFICIENT TIME DIVISION DUPLEX COMMUNICATION

Title (de)
ZEITSTEUERUNGSREGELUNG FÜR ZEITDUPLEXÜBERTRAGUNG

Title (fr)
COMMANDE DE REGLAGE DE SYNCHRONISATION SERVANT A REALISER DES TELECOMMUNICATIONS EN DUPLEX A REPARTITION DANS LE TEMPS

Publication
EP 0873593 A4 20000301 (EN)

Application
EP 96917850 A 19960528

Priority

- US 9607905 W 19960528
- US 46428595 A 19950605
- US 46555595 A 19950605
- US 46513795 A 19950605
- US 46322095 A 19950605

Abstract (en)
[origin: WO9639749A1] A system for time division duplex communication over a single frequency band wherein guard time overhead is reduced by active adjustment of reverse link transmission timing as a function of round trip propagation delay. Responding to a polling message from the base station, a user station seeking to establish communication transmits a reply message. The base station using a propagation delay calculator (812) calculates the distance of the user station by measuring the propagation delay with respect to receipt of the reply message and a timing control unit (806) and transmitter (807) for sending a timing adjustment command to the user station instructing it to advance or retard its timing. Thereafter, the base station monitors the user station transmissions and periodically commands it to adjust its timing in a like manner. The user station transmits a control preamble at the start of each time slot to allow the base station to perform round trip timing calculations and adjustment of the user station's power or antenna selection.

IPC 1-7
H04B 1/00; **H04J 1/00**; **H04J 3/06**; **H04J 3/12**; **H04J 3/16**; **H04J 3/24**; **H04M 3/42**; **H04M 9/00**; **H04M 11/00**; **H04Q 9/00**; **H04B 7/26**

IPC 8 full level
H04B 1/707 (2006.01); **H04B 7/26** (2006.01); **H04J 3/06** (2006.01); **H04J 13/02** (2006.01); **H04W 56/00** (2009.01); **H04J 13/00** (2006.01); **H04Q 7/30** (2006.01)

CPC (source: EP)
H04B 1/7093 (2013.01); **H04B 7/2681** (2013.01); **H04J 3/0682** (2013.01); **H04W 56/0045** (2013.01); **H04W 56/0055** (2013.01); **H04J 2013/0037** (2013.01)

Citation (search report)

- [XA] US 5164958 A 19921117 - OMURA JIMMY K [US]
- [X] US 5317571 A 19940531 - MARCEL FRANCOIS [FR], et al
- [A] US 4460992 A 19840717 - GUTLEBER FRANK S [US]
- [A] US 5313489 A 19940517 - MENICH BARRY J [US], et al
- [PA] US 5509035 A 19960416 - TEIDEMANN JR EDWARD G [US], et al
- [XA] ESMAILZADEH R ET AL: "QUASI-SYNCHRONOUS TIME DIVISION DUPLEX CDMA", PROCEEDINGS OF THE GLOBAL TELECOMMUNICATIONS CONFERENCE (GLOBECOM),US,NEW YORK, IEEE, pages 1637-1641, XP000488805, ISBN: 0-7803-1821-8
- [XA] NEE VAN R D J: "TIMING ASPECTS OF SYNCHRONOUS CDMA", IEEE INTERNATIONAL SYMPOSIUM ON PERSONAL, INDOOR AND MOBILE RADIO COMMUNICATIONS,XX,XX, pages 439-443, XP000619815
- [A] NAOYA MORI ET AL: "FRAME TIMING ACQUISITION FOR DIRECT SEQUENCE SPREAD SPECTRUM SIGNALS IN TIME DIVISION DUPLEX TRANSMISSION", PROCEEDINGS OF THE VEHICULAR TECHNOLOGY CONFERENCE,US,NEW YORK, IEEE, vol. CONF. 43, pages 815-818, XP000393306, ISBN: 0-7803-1267-8
- See references of WO 9639749A1

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