ADAPTIVE SYNCHRONIZATION ARRANGEMENT

Abstract

A CDMA cellular radio-telephone system has switching systems (201) synchronized to public telephone network (100) timing signals, and radio telephones (203) and cell base stations (202) synchronized to a different clock. Transmission delays between the cell base stations and the telephone network are variable. Switching systems include digital communications interfaces to the telephone system, whose connections to the telephone system are synchronized to the telephone system, and whose connections to the cells are nominally also synchronized to the telephone system but whose processor operates for each call within predefined windows of phase relationships to the operation of the cell that is handling the call, and occasionally adjusts its phase relationships to the operation of the telephone system to achieve and maintain its operation within the predefined windows. Packet-switched communications between the cells and the switching systems absorb the phase relationship fluctuations and the timing adjustments in inter-packet intervals. Circuit-switched digital communications between the switching systems and the telephone system absorb the timing adjustments by means of vocoder implemented slips --bit insertions or deletions-- in the communications traffic bit stream.

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