

ABSTRACT

**METHOD AND DEVICE FOR SYNCHRONIZING RECTILINEAR
OR QUASI-RECTILINEAR LINKS IN THE
PRESENCE OF INTERFERENCE**

A method of synchronizing a substantially rectilinear signal being propagated through an unknown channel, in the presence of unknown substantially rectilinear interferences, received by an array of N sensors, in which a known training sequence $s(nT)$ is used comprising K symbols and sampled at the symbol rate T ($s(nT)$, $0 \leq n \leq K - 1$), characterized in that, based on observations $\mathbf{x}((n + l/p)T)$ over the duration of the training sequence, where $p = T/T_e$ is an integer and T_e the sampling period, a virtual observation vector $\mathbf{X}((n + l/p)T) = [\mathbf{x}((n + l/p)T)^T, \mathbf{x}((n + l/p)T)^\dagger]^T$ is defined, as well as a decision criterion or decision statistic taking into account the second-order non-circular nature of the interferences, by using the first and second correlation matrices of the virtual observation vector $\mathbf{X}((n + l/p)T)$.

Figure 1 to be published



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