UWB PRECISION GEOLOCATION USING FFT INTERPOLATION (WedPmPO1)

Author(s) :

Kutluyil Dogancay (University of South Australia, Australia)
A. Rahim Leyman (Institute for Infocomm Research, Singapore)

Abstract :

A precision positioning algorithm employing low data rate ultra wideband (UWB) technology is proposed. The positioning algorithm utilizes cross−correlation for estimating time difference of arrival (TDOA) between UWB pulses received at multiple receivers and provides a precise location estimate of the signal source thanks to FFT interpolation. The geolocation estimate is obtained from an iterative maximum likelihood estimator implemented as a Gauss−Newton algorithm. The effectiveness of the proposed precision positioning algorithm is verified by way of computer simulations.

Menu