

Title (en)
METHOD AND APPARATUS FOR PRECISION GEOLOCATION

Title (de)
VERFAHREN UND GERÄT ZUR PRÄZISIONSGEOLOKALISIERUNG

Title (fr)
PROCEDE ET APPAREIL POUR GEOLOCALISATION PRECISE

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EP 97945181 A 19970703

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Abstract (en)
[origin: WO9802762A2] A method and apparatus for providing an improved satellite-based tracking system use a reference transmitter at a site with a known location to provide an error correction vector, which can be applied to improve the position estimate of transmitter at unknown locations. The technique of determining the position of a transmitter on the ground is known as geolocation. For the purpose of geolocation, a transmitter/receiver (transceiver) is interrogated via a satellite ground station through a satellite transponder in Earth orbit. Upon reception of the transceiver's unique identificataon code broadcast by the satellite, the transceiver will transmit its identification code back to the satellite ground station via the satellite transponder. The round trip response time is used to calculate the range from the satellite to the transceiver. The Doppler shift of the received signal, due to the satellite motion of a satellite in non-geostationary orbit, is used to calculate the angle-of-arrival at the satellite. The range and angle-of-arrival are combined to calculate the position estimate of the location of the transceiver. This geolocation process is repeated for a transceiver at a known reference site and for all mobile and/or fixed transceivers at unknown sites. The position estimate generated for the reference transceiver is compared to the a-prior known position reference transceiver. The difference between the position estimate and the known location of the reference side produces an Error Vector. This Error Vector is then applied to the position estimates of all transceivers at the a-prior unknown positions to provide an improved position estimate.

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Citation (search report)
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Cited by
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