ADAPTATIVE DETECTION FUNCTION BASED ON STATISTICAL PROPAGATION CHANNEL ESTIMATION FOR GNSS RECEIVERS

Technological advantages

Innovative :

- Adaptation of the detection function to the propagation environment.

Efficient GNSS receivers :

- Significant improvements in robustness and accuracy especially in urban environments.

Invention synthesis

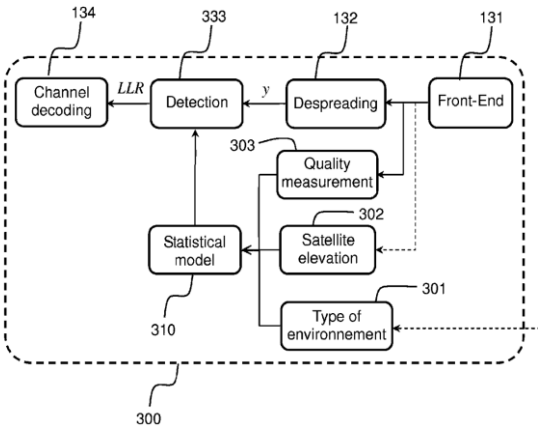
The invention deals with a method to optimize the decoding process for GNSS receivers in tough conditions.

The satellite GNSS navigation signal with added coded redundant data is modulated and shifted to a carrier frequency. GNSS receivers compute the position, velocity, time (PVT) from the satellites (at least four) pseudo-range measurements.

The present invention proposes a method to reduce the impact of the propagation channel over the decoding of the navigation message. To decode the protected navigation message, a set of parameters are used in a statistical propagation channel model to compute a statistical channel attenuation. This allows for the computation of soft-decoding algorithms from a detection function.

Potential applications

- GNSS receivers.



GNSS Receiver block diagram according to this invention

Commercial benefits

- Improvements of GNSS receivers accuracy.
- More resilient to transient failures.
- Well suited to complex situations such as urban canyons.

Patented invention - under license.

For more information :

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