GNSS RECEIVER WITH A CONFIDENCE INDEX

Technological advantages

Innovative :

- Evaluation of the present and future measurements accuracy.

Efficient :

- Adjust the signal processing according to the present and future conditions.
- Smooth transitions for multifrequency systems.

Invention synthesis

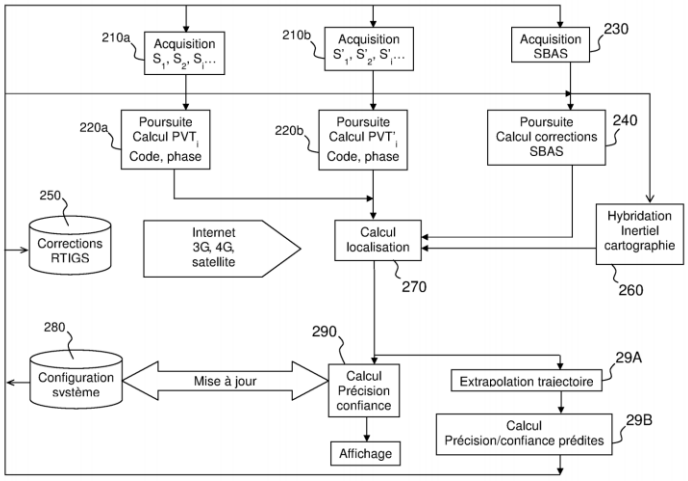
The invention deals with a GNSS system and an associated confidence index for present and future measurements.

GNSS based systems use satellites constellations to compute the position, velocity, time (PVT). Errors from atmospheric perturbations, multipath, clock offsets, … degrade the accuracy. Corrections can be applied but are complex and costly. Precise point positioning (PPP) uses a set of signals (inertial sensors, mapping, …). The need may also be for the knowledge of the measurement and a confidence index.

The invention presents a set-up to receive positioning signals from satellites constellations with access to the absolute and/or relative measurement accuracy. The receiver can store data about the set-up and the receiving conditions. The development model may be based on a Kalman filter.

Potential applications

- Autonomous driving cars, air vehicles, drones….



Schematic according to this invention

(210a,b) Satellite signals data acquisition
(220a,b) Mono/multifrequency signal processing for the PVT computation
(230) SBAS signal acquisition for correction
(240) SBAS correction processing
(250) RTIGS corrections from ground network
(260) Mixing radionavigation with inertial measurements, heading, mapping
(270) Positioning computation, introduce an error development model
(280) Database with the system set-up
(290) Compute measurement accuracy and current confidence index
(29A) Trajectory computation on a time lapse
(29B) Compute development in accuracy and in the measurements confidence

Commercial benefits

- Positioning system capable of predicting a confidence index in the present and future positioning.
- Especially suited to positioning critical systems.

Patented invention - under license.

For more information :

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