RADIO-NAVIGATION SIGNAL RECEIVER WITH A PROCESSOR UNIT FOR THE CORRELATION POWER

Technological advantages

- **Robust tracking of a degraded GNSS signal code**
- **Extended measurements range for the carrier phase in a degraded GNSS signal**
- **Higher synchronization with degraded GNSS signals**

Invention synthesis

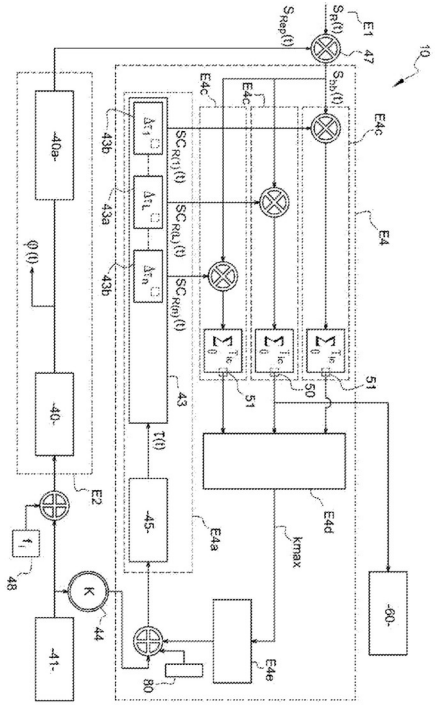
The invention deals with a receiver for the radio-navigation signals.

The GNSS signals transmit binary signals on a carrier with information for the radio-navigation and a pseudo-random code (PRN, noise) for the satellite identification and the pseudo-distances. In degraded conditions, it may be difficult to keep in sync. In metrology, atmospheric soundings are carried out studying radio-occultation.

The invention enhances the degraded GNSS signal tracking and the carrier phase measurement. To this end, a GNSS stage creates a signal with a replicated estimated carrier. A mixer between the digitized signal and the carrier replica generates a signal in base band. A feedback loop for the code location and a set of correlators between the replicated signal and the base band signal allow to compute a correlation power value from the main correlation and the early / late signals. From the correlations, a processor unit adjusts the code frequency.

Potential applications

- Applications for GNSS signal based systems : radio-navigation and positioning
- Applications in metrology (METOP, COSMIC missions)



Schematic view for an example of a radio-navigation signals receiver

Commercial benefits

- Higher quality for radio-navigation in degraded conditions
- Can be used for metrology and radio-occultation

Patented invention - under license.

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