

Satellite positioning method, device, system and construction equipment

Positioning process continues even if the object posture is changed

Overview

Currently, satellite positioning method using signal emitted from satellite is known to determine the location of an object. Construction equipment such as backhoe and dump truck changes its position and posture. For example, a dump truck changes its posture with the angle of his cargo bed change. As a result, construction equipment with such changing position and posture may not be able to continue the position determination process.

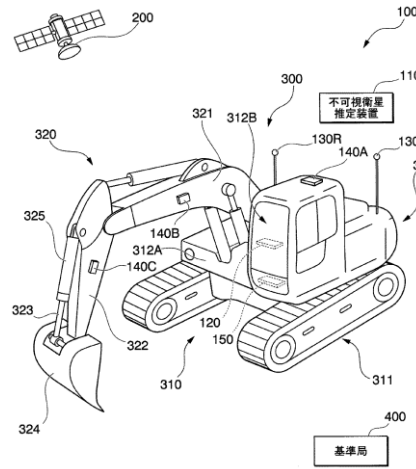
This invention is able to continue the process of determining one object's position even if this object changes its posture. In determining the position of an object using signal emitted from satellite, the invention determines the position of the object without using signal emitted from invisible satellite that may not be able to receive direct waves when the object's posture changes. This improves the accuracy of position information even when one object's posture changes.

Product Application

- Dump truck, backhoe and other construction equipment
- Machine that changes position and orientation

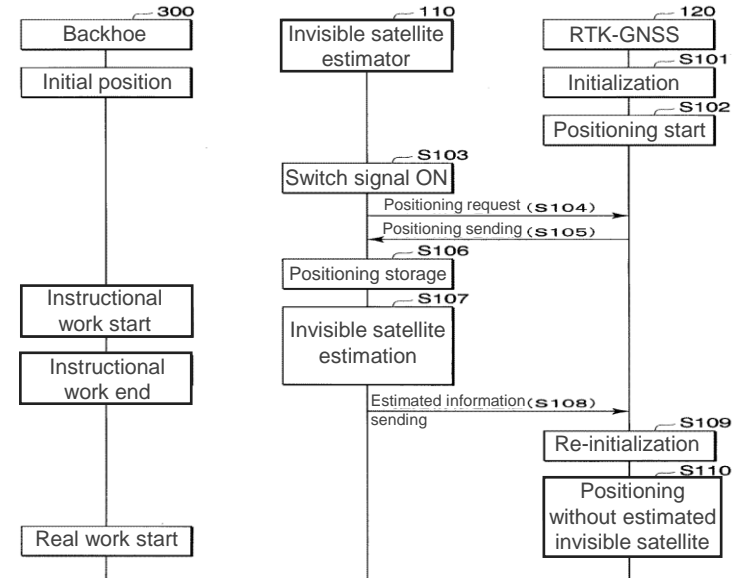
IP Data

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- 100. Satellite positioning system
- 110. Invisible satellite estimator
- 130L/R. Antenna
- 140A/B/C. Inertial measurement device
- 150. Foot switch
- 200. Satellite
- 300. Backhoe
- 310. Main body
- 311. Lower driving body
- 312. Upper rotating body
- 312A. Rotating frame
- 312B. Cab
- 320. Backhoe attachment
- 321. Boom
- 322. Arm
- 323. Bucket link
- 324. Bucket
- 325. Bucket cylinder
- 400. Reference station

Determine positioning and location without the use of invisible satellite



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