



IMPROVED GNSS RECEPTION WITH ANTENNA AND VISION

The invention lessens or even eliminates the greatest disturbances affecting a GNSS signal

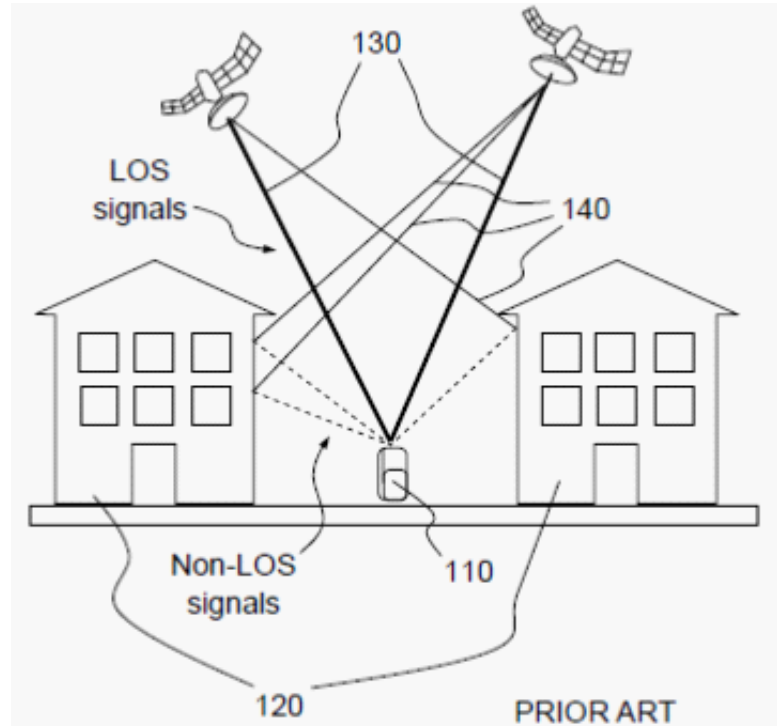
Technological advantages

The fish eye is sufficient to identify the “free” zone without having to know the precise position and orientation of the antenna at each moment. This means that additional sensors such as an inertial unit (which drifts over time) are not required.

Another benefit is that it makes the positioning robust relative to most scramblers, which will be eliminated at the physical level, and not at the software level, providing that they come from a level close to the ground, i.e. outside the “free” zone.

Invention overview

It is a locating/navigation system that does away with multiple trips and/or interferences (in particular those from a level close to the ground), and thus improves positioning, in particular in urban environments, thanks to a fish eye camera combined with an image processing algorithm and the formation of beams at the reception antenna. In a sense, the system focuses on the zone (sky) where the signal can normally be captured without major disturbances.



GNSS receiver disturbed by multiple trips

Potential applications

Urban mobility

- Autonomous vehicles under development where the system could be integrated in the design phase without a major weight/sizing impact
- Heavier vehicles with an external antenna (on the roof) that could easily be replaced by the new system: lorries, buses, construction machinery, etc.

Airports

- Accurate guiding of vehicles and aircraft on the ground, on airport runways

Drones in urban environments

- Precision at drone take-off or landing (on ground, between buildings).

Commercial advantages

Low cost

- fish eyes are available on the market at low cost, and in very small formats. It is even possible to adapt fish eye kits to existing video sensors.

Simple

- Simple and effective solution for most disturbance signals

TRL : 3

Patented invention, available under license