Innovative estimation and depointing process using spread spectrum signals and an accompanying system

**Technological advantages**

No scanning loop
Convergence of depointing value in first iteration, with option of refining the results later on

A simple and efficient system
Signal despreading is not necessary for calculating the depointing, unlike coherent angle offset measurement systems normally used
Easy to implement

Better performance levels than a non-coherent system
Better tracking capabilities

**Overview of invention**

Angular offset tracking receiver for spread spectrum signals via digital signal processing.
The radio frequency signal to which the antenna must be pointed is a modulated spread spectrum signal.
The present system enables highly-refined pointing, using an antenna equipped with an angle offset measurement system.

**Commercial benefits**

Reliable process based on simple design
Processing with software following digitisation of signal
Simple architecture
Better performance levels than traditional non-coherent systems

**Potential applications**

Space:
Satellite monitoring from ground stations (with possibility of distinguishing between emitting systems during training flights based on their spreading code)
Pointing of on-board antennas to ground-based emitting systems (fixed and mobile) in the spread spectrum

Civil and military drones:
Pointable antenna on board drone or in-flight relay station, or on ground

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Invention developed by CNES