

# ATTITUDE MEASUREMENT DEVICE WITH DAY AND NIGHT OPTICAL SENSOR

*Innovative attitude measurement system for aircraft*

## Technological benefits

### Effective

Stellar recalibration method of self-navigation systems (inertial, out GPS / GNSS).

Accurate.

Working day and night.

### Robust

Robust to spoofing.

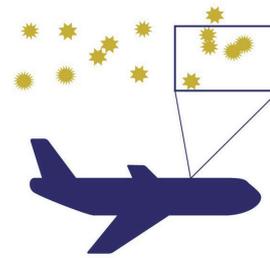
Robust to large angular rates.

## Invention overview

The invention is a day and night attitude measurement device. The star images are taken by an adapted optical sensor.

The attitude measuring device is autonomous, able to automatically recognize the stars and operates at low altitude. Then the device can be used on air or land.

The invention relates to optical instrumentation (sensor, filters, polarization) and embedded software.



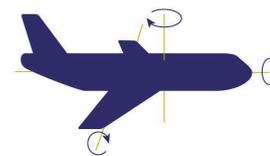
1

Acquisition of stars image by the optical sensor



2

Recognition of stars known in images



3

Gyroscope measures



4

Calculation of the attitude day and night

## Commercial benefits

### Flexible

Adaptable to different types of aircraft.

## Potential applications

Aircraft, UAVs, balloons, ships, submarines, land vehicles, guidance systems.

**TRL : 9**

*Invention available under license.*