IMPROVED AEROSTATIC ASSEMBLY

Technological advantages

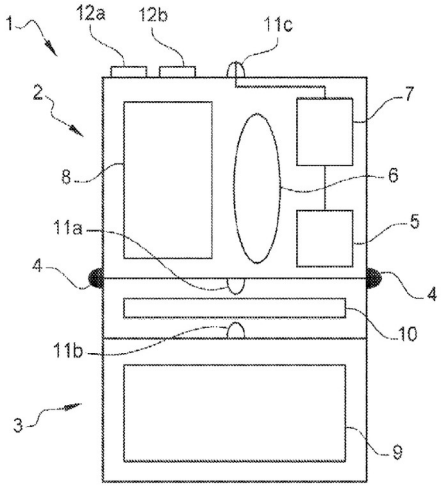
- Extended Measuremen for meteorological data acquisition within a cyclone's eye.
- Independence from Ocean Currents.
- Enhanced Durability: probe within the cyclone's eye, away from the wall.
- Stable and continuous data collection : dual marine and aerial gondola System.
- Automated Deployment: balloon inflation and gondola separation.

Invention synthesis

This invention introduces an improved aerostatic assembly designed to overcome the limitations of current meteorological probes in cyclone study. Two-part system: an aerial gondola equipped with an inflatable balloon, sensors, and a transmitter, and a marine gondola housing the power supply and acting as ballast. Assembly dropped into a cyclone's eye. As it approaches the sea surface, sensors detect the splashdown, triggering the balloon's inflation and the controlled separation of the two gondolas. Connected by a cable, the aerial gondola is carried by the converging winds at the cyclone's center, while the marine gondola floats, providing stability and a sustainable power source. This design allows the device to remain in the cyclone's eye for an extended period.

Potential applications

- Improved models for forecasting cyclone: trajectory and intensity.
- Meteorological Research: continuous data from the heart of storm systems.
- Climate Monitoring: data on extreme weather phenomena.
- Maritime Safety: real-time information.



Aerostatic assembly set-up
(1) aerostatic assembly
(2) aerial nacelle
(3) marine nacelle
(5) balloon in deflated state
(6) gas cartridge
(7,10) connection means
(8) atmospheric measurement device
(9) powering device for (12)
(12) transmission device

Commercial benefits

- Data Service Development: Commercialization of collected information (weather services or sensitive sectors).
- Partnerships with Research Organizations.
- Reduction of Economic Losses: Better cyclone prediction.

Patented invention - under license.

For more information :

Valo-TT@cnes.fr