AEROSTAT INTENDED TO PERFORM MISSIONS FOR TRANSPORTING A PAYLOAD

Technological advantages

- **Guaranteed use of renewable energy**
- **Powering payloads on extended periods of time**

Invention synthesis

The invention deals the use of lighter than air aerostat for the transport and use of payloads at high altitudes for extended time periods.

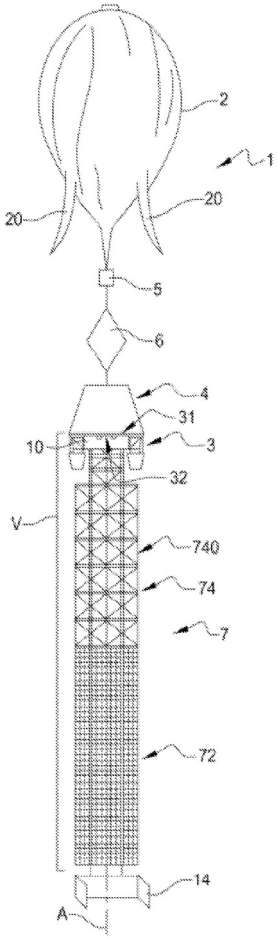
Aerostat, for example open stratospheric balloons have their flights constrained by the limits from the power consumption of onboard equipments and payloads (about 48h). On-board batteries are used, but the longer the mission and the more penalizing the batteries mass become.

The invention proposes the use of deployable solar panels during the flight to ensure a long-term and sustainable powering of on-board equipments and payloads. Deployable solar panels are placed under the aerostat.

When stored, they are aligned with the flight chain and protected (with a hard shell cover for example). When in use, they extend vertically on top of each other in a vertical plane. The solar panels are connected one another with removable hinges and they are offset from the central vertical axis using plates. A rotative system is used to drive the solar generator around the vertical axis (flight chain).

Potential applications

- Earth observations from the stratosphere
- Space observations from the stratosphere
- Telecommunication relays
- Scientific research (climate, pollution, ...)



Overall schematic view

(1) Aerostat
(2) Inflatable body
(3) Payload place holder
(4) Payload
(5) Pyrotechnic separators
(6) Parachutes
(7) Solar generator
(10) Protective covering
(31) Upper face of payload holder
(32) Lower face of payload holder
(72) Photovoltaic panels
(74) Set-up to offset panels

Commercial benefits

- Payload transport at reduced costs for extended periods of time (>48h).

Patented invention - under license.

For more information :

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