Airstar Aerospace is a company of CNIM Group.
Thanks to Airstar Aerospace’s tethered aerostats, 250 kg of payload can be lifted at 1000 meters high, 24/7.
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Airstar Aerospace, leader of your missions

Made for medium and long term missions, Airstar Aerospace’s tethered aerostats are used to take onboard payloads dedicated to surveillance and communication needs.

Qualified, reliable and autonomous, our platforms include:
• an aerostat equipped with telemetry sensors
• a tether (power supply and data transfer)
• a mooring station with a winch
• a telemetry station
• a flight manual.

Strengths of our solutions
• Persistence: ongoing operation from 1 day to several weeks.
• Low operational costs:
  - low cost per flight hour
  - easy training of operators (no remote pilote)
  - quick deployment time
  - low logistical footprint.
• Payloads: embedding of surveillance and/or communication sensors, giving the ability to visualize the mission in 3 dimensions.
• Safety: fail-safe reliable solutions with very high safety coefficients.
Airstar Aerospace: a complete range of tethered aerostats

- **Strategic**
  - Short and medium term operations
  - 5 days flight

- **Operative**
  - Long term operations
  - from 7 days to 15 days flight

- **Tactical**
  - White Hawk
  - Eagle Owl
  - Condor
Condor tethered aerostat

**Strengths**
- Completely autonomous for a long term use
- Embedding of any kind of payload
- High altitude for a broader spectrum and a quicker detection
- Resistance to harsh weather conditions
- Fail-safe: resistant to basic breakdown

**Persistence: 15 days**

**Flight conditions**
- Flying height (AGL) 1000 m
- Operational wind speed Up to 130 km/h

**Operations**
- Number of operators for deployment/fold-up 6 to 8 operators
- Time for deployment/fold-up 4 h
- Flight endurance with no helium refill (persistence) 15 days
- Available power for payload 5 kW
- Data transfer Fiber optics

**Logistical footprint**
- Transport and storage type of the tethered aerostat Trailer truck

**Payload:** up to 250 kg
Eagle Owl tethered aerostat

**Strengths**
- Adaptable to a large range of needs
- Broad embedding ability of payloads
- Easy to deploy and to operate
- Resistant to strong weather conditions
- Fail-safe: resistant to basic breakdown

**Persistence:** 7 days

**Flight conditions**
- Flying height (AGL): 600 m
- Operational wind speed: Up to 110 km/h

**Operations**
- Number of operators for deployment/fold-up: 3 operators
- Time for deployment/fold-up: 4 h
- Flight endurance with no helium refill (persistence): 7 days
- Available power for payload: 2 kW
- Data transfer: Fiber optics

**Logistical footprint**
- Transport and storage type of the tethered aerostat: 20 ft container Semi-trailer

Payload: up to 90 kg
**White Hawk tethered aerostat**

**Strengths**
- Excellent price to performance ratio
- Low logistical footprint
- Easy to deploy
- Automated take-off and landing system
- Fail-safe: resistant to simple breakdown

**Persistence:** 5 days

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<table>
<thead>
<tr>
<th><strong>Flight conditions</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Flying height (AGL)</td>
<td>200 m</td>
</tr>
<tr>
<td>Operational wind speed</td>
<td>Up to 40 km/h</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Operations</strong></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Number of operators for deployment/fold-up</td>
<td>2 operators</td>
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<tr>
<td>Time for deployment/fold-up</td>
<td>45 min</td>
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<tr>
<td>Flight endurance with no helium refill (persistence)</td>
<td>5 days</td>
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<tr>
<td>Available power for payload</td>
<td>220 W</td>
</tr>
<tr>
<td>Data transfer</td>
<td>BPL</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th><strong>Logistical footprint</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport and storage type of the tethered aerostat</td>
<td>5 m³ van</td>
</tr>
</tbody>
</table>

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**Payload:** up to 5 kg

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![Diagram of White Hawk tethered aerostat](image-url)
Another way to achieve your missions, by choosing the persistence of tethered aerostats.

- Because of their duration or of their need of stationary position, some missions can not be achieved by standard drones or aircrafts, especially when it comes to surveillance or telecommunication.
- The tethered aerostat offers the necessary persistence to achieve missions over several months with a payload capability up to 250 kg.
- The tethered aerostat is a competitive solution in terms of costs and logistics.
<table>
<thead>
<tr>
<th></th>
<th>Tethered aerostat</th>
<th>Fixed-wing drone Mini-UAV (MUAV) type</th>
<th>Helicopter Airbus EC145 type</th>
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</thead>
<tbody>
<tr>
<td><strong>Life cycle costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(purchase, operation, maintenance, service)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to one hour flight</td>
<td>● ● ● ● ●</td>
<td>● ● ● ○ ○</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td><strong>Persistence and autonomy</strong></td>
<td>● ● ● ● ●</td>
<td>○ ○ ○ ○ ○</td>
<td>● ○ ○ ○ ○</td>
</tr>
<tr>
<td>24h per day for several weeks</td>
<td>Up to 3h</td>
<td>Up to 4h30</td>
<td></td>
</tr>
<tr>
<td><strong>Payload capacity</strong></td>
<td>● ● ○ ○ ○</td>
<td>● ● ○ ○ ○</td>
<td>● ● ● ● ●</td>
</tr>
<tr>
<td>Up to 250 kg</td>
<td>Up to 30 kg</td>
<td>Up to 1500 kg</td>
<td></td>
</tr>
<tr>
<td><strong>Stationary ability</strong></td>
<td>● ● ● ● ●</td>
<td>● ● ○ ○ ○</td>
<td>● ● ● ○ ○</td>
</tr>
<tr>
<td>Up to 250 kg</td>
<td>Up to 30 kg</td>
<td>Up to 1500 kg</td>
<td></td>
</tr>
<tr>
<td><strong>Missions efficiency</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surveillance, observation</td>
<td>● ● ● ● ●</td>
<td>● ● ● ○ ○</td>
<td>● ● ○ ○ ○</td>
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<td>Intervention</td>
<td>● ● ○ ○ ○</td>
<td>● ● ● ● ●</td>
<td>● ● ● ● ●</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>● ● ● ● ○</td>
<td>● ○ ○ ○ ○</td>
<td>● ○ ○ ○ ○</td>
</tr>
<tr>
<td><strong>Weatherproof</strong></td>
<td>● ● ● ○ ○</td>
<td>● ● ○ ○ ○</td>
<td>● ● ● ○ ○</td>
</tr>
<tr>
<td>Up to 130 km/h of wind (70 knots)</td>
<td>Up to 50 km/h of wind (27 knots)</td>
<td>Up to 100 km/h of wind (54 knots)</td>
<td></td>
</tr>
<tr>
<td><strong>Logistics and support</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructures of deployment</td>
<td>● ● ● ● ●</td>
<td>● ● ● ○ ○</td>
<td>○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>Deployment time</td>
<td>● ● ● ○ ○</td>
<td>● ● ● ● ○</td>
<td>● ● ● ○ ○</td>
</tr>
<tr>
<td>Number of operators</td>
<td>● ● ● ○ ○</td>
<td>● ● ● ○ ○</td>
<td>● ● ● ○ ○</td>
</tr>
<tr>
<td>From 2 to 8 operators</td>
<td>From 1 to 4 operators</td>
<td>From 3 to 10 pilots, operators and mechanics</td>
<td></td>
</tr>
</tbody>
</table>

Legend: ● ● ● ● ● = Very favourable / ○ ○ ○ ○ ○ = Very unfavourable
Example of a tethered aerostat in use

Data transfer between the tethered aerostat and the ground thanks to fiber optics or BPL.
Areas of operations

**Surveillance**
Detection, tracking, identification, localisation

- Military control (intelligence or liaison officer between advanced and support bases)
- Industrial sites
- Airports, harbours
- Sensitive sites (nuclear facilities, offshore platforms, ...)
- Borders and road control
- Public events and demonstrations securement
- Urban crowd control
- Anti-smuggling
- Piracy prevention
Emergency or planned intervention

- Situational assessment on natural disasters
- Rescue organization on large accidents
- Detection of floating debris
- Electronic warfare

Telecommunication

- 4G tactical bubble
- Telecommunication relays
- COMINT
Airstar Aerospace: a historical and unique know-how

With its 45 years experience in aerospace activities (ex Space division of Zodiac Marine, acquired in 2015) and its involvement in major large R&D projects such as the Stratobus™ programme, Airstar Aerospace is a key player on the global aerostat market.

Thanks to a strong support from European space agencies, and especially from the CNES (French space agency), or from major customers such as Thales group and Airbus group, Airstar Aerospace is the leading partner of your “lighter than air” aerospace solutions.

Since March 2019, Airstar Aerospace has been a subsidiary of CNIM Group, a French industrial engineering contractor and equipment manufacturer.
Airstar Aerospace offers turnkey solutions, from the aerostat design to payload embedding. Together with a strong network of partners, Airstar Aerospace achieves its customers’ tailor-made projects, thanks to its unique skills:

- engineering in **innovative flexible materials**
- high technical skills in **fabrics and films assembling**
- **mechanical modelling** of large deformations
- **equipped envelopes** and flexible structures design
- **development of aerostat equipments**: embedded electronics and mechatronics, complex cabling (tether), mechanical mooring systems, telemetry reception, inflation station...
- **payload integration**: optronics, telecommunication, radar...
- providing and training of **all operating and maintenance services on aerostats**.

Relying on half a century of experience, Airstar Aerospace highly values safety while being compliant with the European aeronautics and space regulations.
Since 1971, Airstar Aerospace relies on a strong aerospace expertise.

Airstar Aerospace designs and produces tethered aerostats, airships, stratospheric balloons, thermal protections for satellites and leads tailor-made projects for its customers.

Our know-how is based on engineering in innovative flexible materials, high technical skills in fabrics and films assembling, equipped envelopes and flexible structures designs, development of aerostat equipments, payload integration as well as all operating and maintenance services on aerostats.

among our references:
THALES | AIRBUS | CNES | CNRS | OHB | SSC | ZERO 2 INFINITY | METEO FRANCE
CEA | FRENCH MoD (DGA) | ZODIAC

Airstar Aerospace is a company of CNIM Group

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ISO 9001 certification
Made in France
Stakeholder of tomorrow’s transport program of the “Nouvelle France industrielle” (new industrial France) with Stratobus™
Supplier of many European space agencies
Millions of m² of balloons experienced with success for 40 years by the CNES
1 production site
1 operations and flight test center

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