airstar

AEROSPACE

Airstar Aerospace is a company of **CNIM Group.**

Tethered aerostats

> Condor
> Eagle Owl
> White Hawk


Thanks to
Airstar Aerospace’s
tethered aerostats,
250 kg of payload
can be lifted at
1 000 meters high,
24/7.

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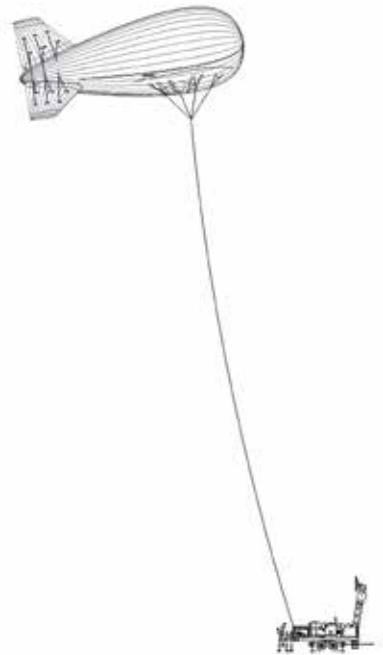
Airstar Aerospace, leader of your missions

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.



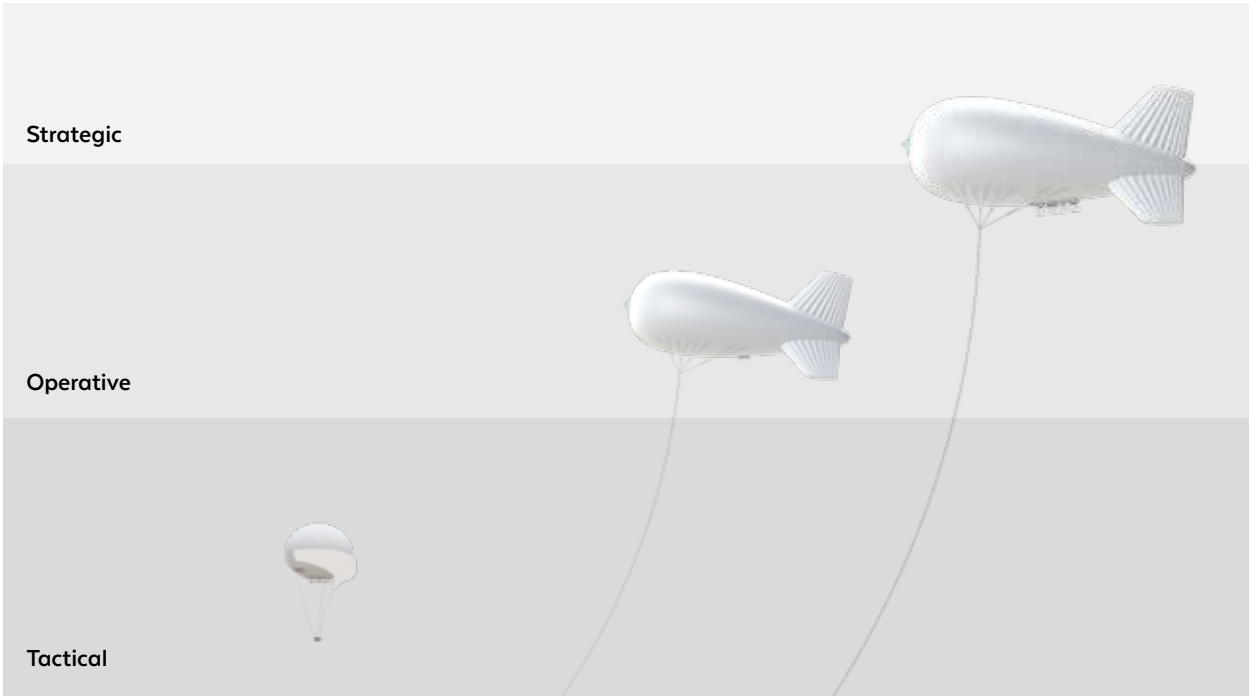
Strengths of our solutions

- **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.

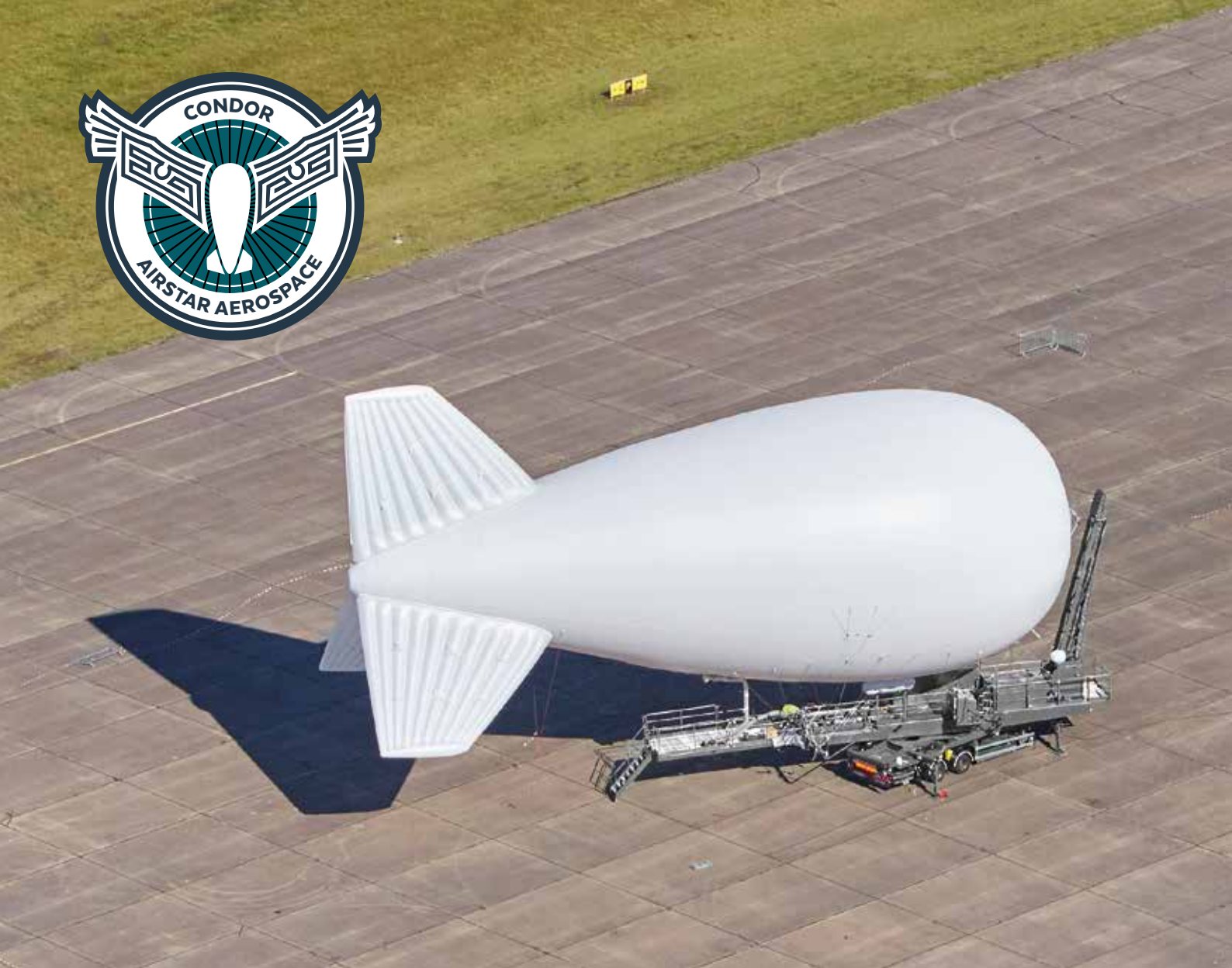
Airstar Aerospace: a complete range of tethered aerostats

Short and medium term operations
5 days flight

Long term operations
from 7 days to 15 days flight



White Hawk | Eagle Owl | Condor


CONDOR
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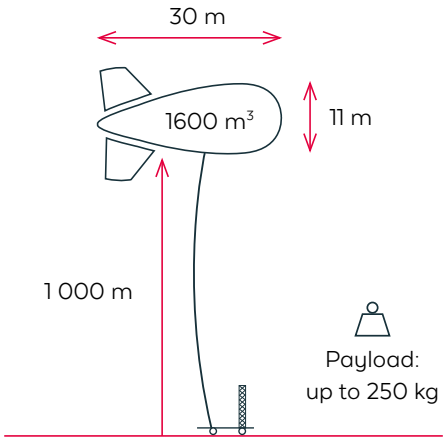
Condor tethered aerostat

Strengths

- Completly 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)	1 000 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


EAGLE OWL
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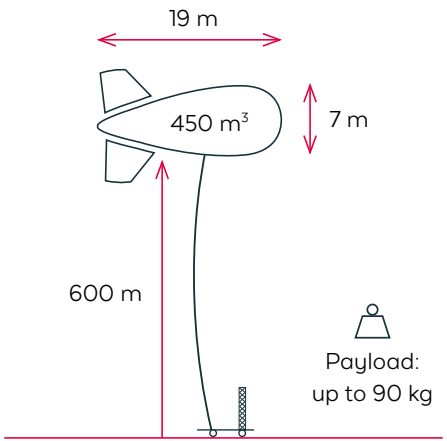
Eagle Owl tethered aerostat

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


WHITE HAWK
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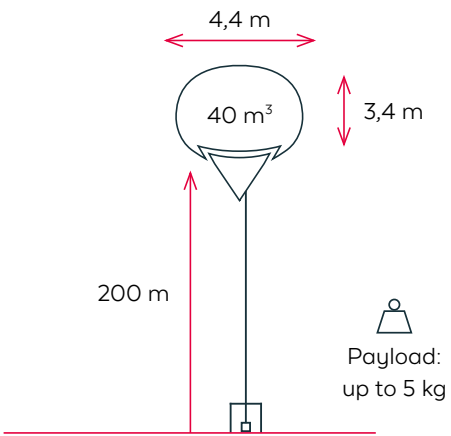
White Hawk tethered aerostat

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**

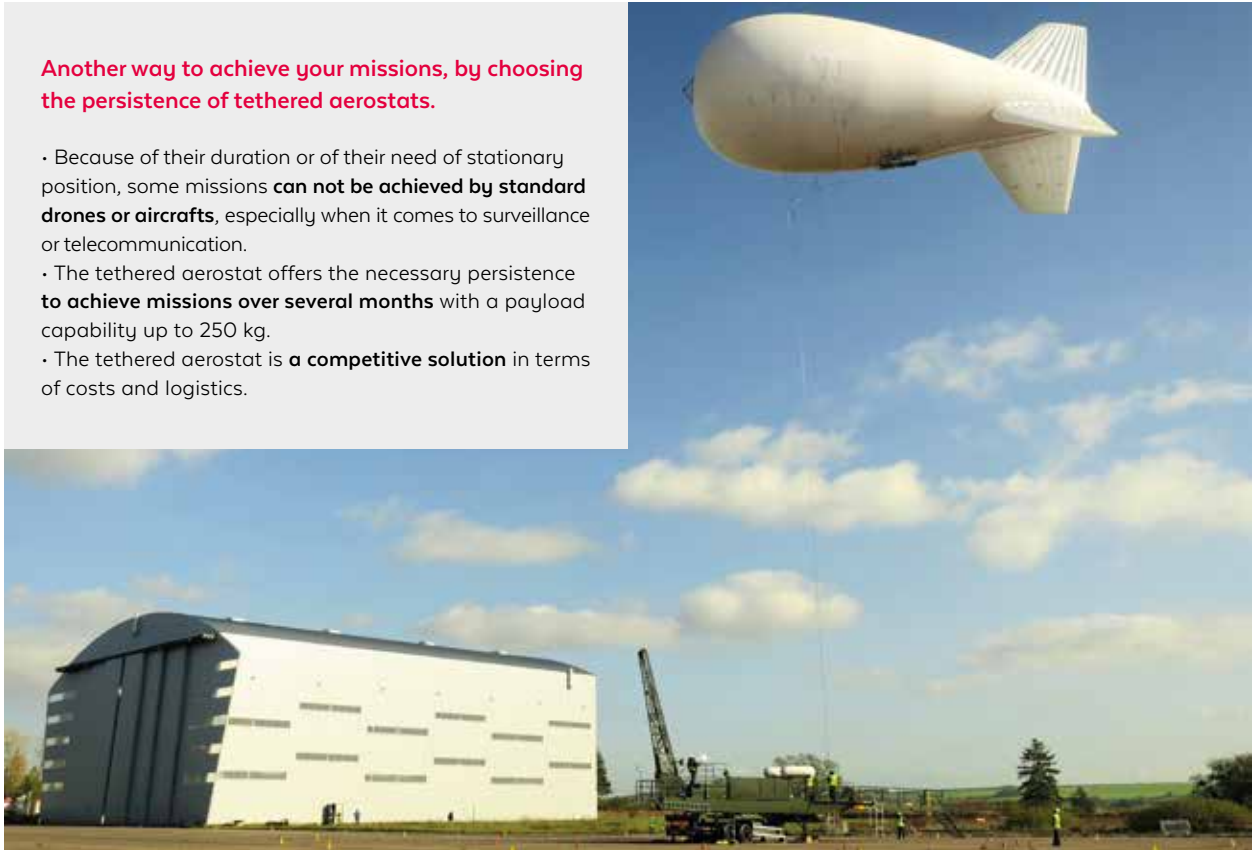


Flight conditions	
Flying height (AGL)	200 m
Operational wind speed	Up to 40 km/h
Operations	
Number of operators for deployment/fold-up	2 operators
Time for deployment/fold-up	45 min
Flight endurance with no helium refill (persistence)	5 days
Available power for payload	220 W
Data transfer	BPL
Logistical footprint	
Transport and storage type of the tethered aerostat	5 m³ van

Tethered aerostats and standard aircrafts, an efficient complementarity

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.

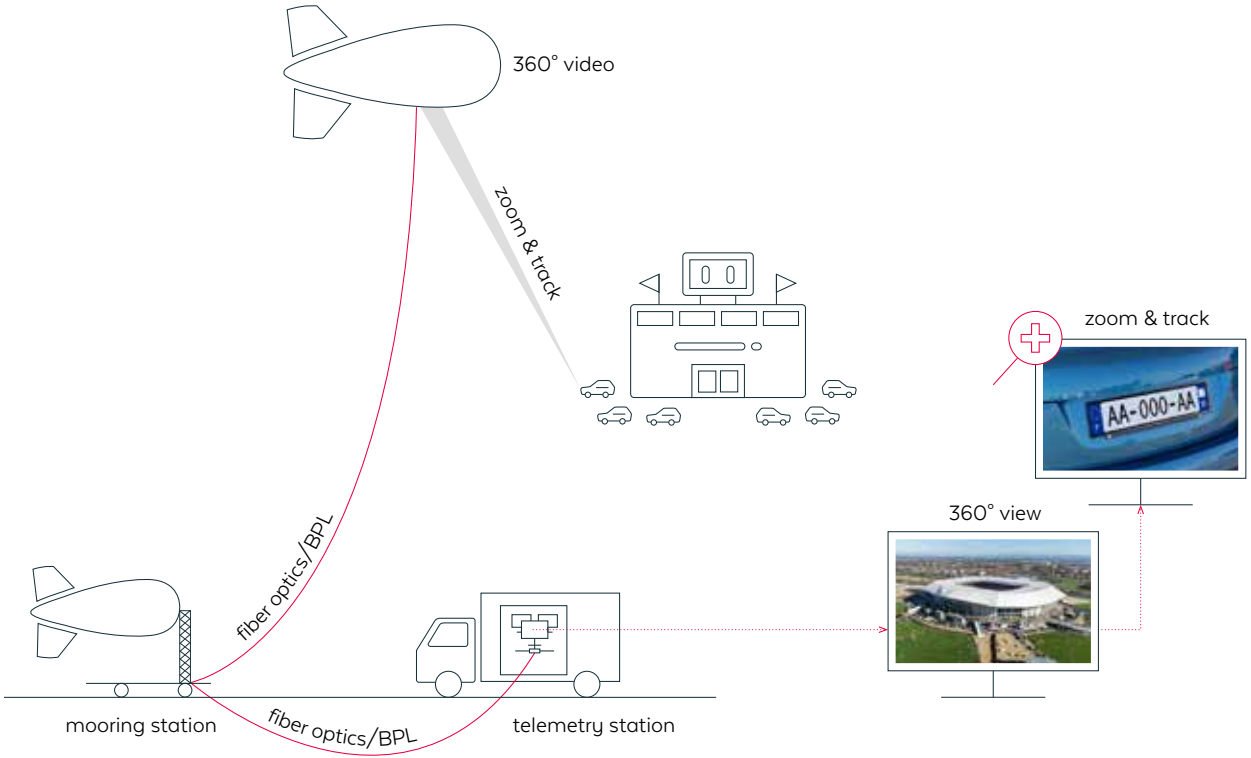


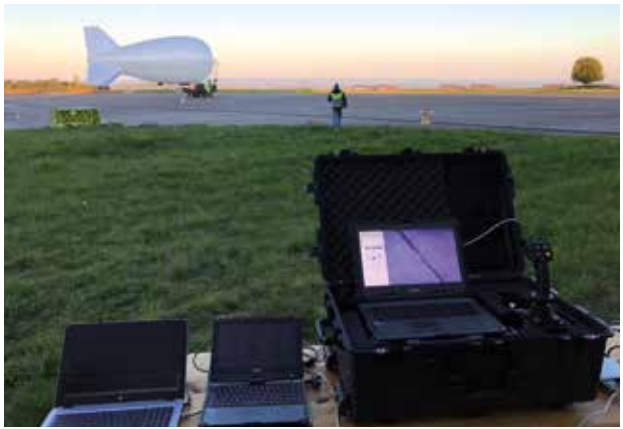
			Tethered aerostat	Fixed-wing drone Mini-UAV (MUAV) type	Helicopter Airbus EC145 type
Life cycle costs (purchase, operation, maintenance, service)	Compared to one hour flight		●●●●●	●●●○○	●○○○○
Operations	Persistence and autonomy		●●●●● 24h per day for several weeks	●○○○○ Up to 3h	●○○○○ Up to 4h30
	Payload capacity		●●●○○ Up to 250 kg	●●○○○ Up to 30 kg	●●●●● Up to 1500 kg
	Stationary ability		●●●●●	●●○○○	●●●○○
	Missions efficiency	Surveillance, observation	●●●●●	●●●○○	●●○○○
		Intervention	●●○○○	●●●●○	●●●●●
		Telecommunication	●●●●●	●○○○○	●○○○○
	Weatherproof		●●●●○ Up to 130 km/h of wind (70 knots)	●●○○○ Up to 50 km/h of wind (27 knots)	●●●○○ Up to 100 km/h of wind (54 knots)
Logistics and support	Infrastructures of deployment		●●●●●	●●●●○	●○○○○
	Deployment time		●●●○○	●●●●○	●●○○○
	Number of operators		●●●○○ From 2 to 8 operators	●●●●○ From 1 to 4 operators	●●○○○ From 3 to 10 pilotes, operators and mechanics

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.**

AIRSTAR
AEROSPACE

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 engineeering 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.

MADE IN FRANCE — Made in France

ISO 9001 certification

Stakeholder of tomorrow's transport program of the "Nouvelle France industrielle" (new industrial France) with Stratobus™

Millions of m² of balloons experienced with success for 40 years by the CNES

Supplier of many European space agencies

1 production site
1 operations and flight test center

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

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