Hypersphere HS-5K

CONTINUOUS SURVEILLANCE SYSTEM

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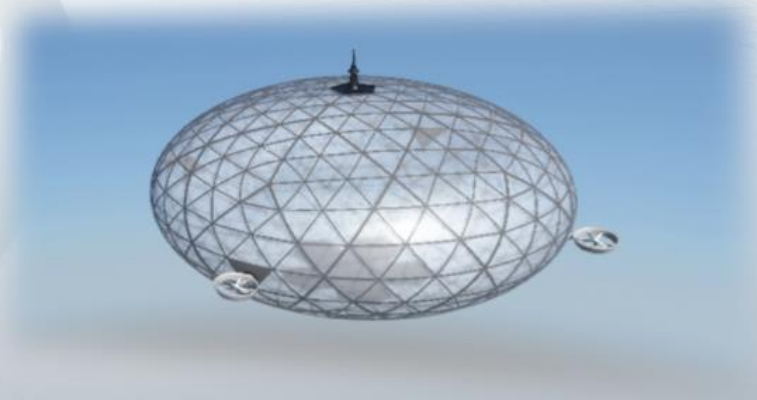

Hypersphere Use Cases

- Homeland Security
- Critical Infrastructure
- Disaster Management
- Communication
- Communal Service
- Commercial Applications
- Environmental Protection

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- coastal surveillance
- border protection
- observing and securing large public events

Hypersphere Use Cases

- **border protection**

- HS fleet patrols along the border
- frequent revisits detect any intrusion
- HS UAV autonomously responds and alerts
- patrol is continued after incident

Hypersphere Use Cases

- Homeland Security
- Critical Infrastructure
- Disaster Management
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- Environmental Protection

- monitoring local static structure
- monitoring oil and gas pipeline
- monitoring the power grid
- protecting maritime transportation

Hypersphere Use Cases

- **monitoring local static structure**

- oil refinery, military installation, "green zone", ...
- 24/7/365 surveillance of up to 230km2 per UAV
- resistant against any handheld weapon
- practically invisible and inaudible
- detects intruders from 8+ kilometers

Hypersphere Use Cases

- Homeland Security
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- traffic optimization
- fast responders situation awareness
- agricultural assesment

Hypersphere Use Cases

- **traffic optimization**

- existing traffic optimization infrastructure limited
- HS fleet monitors entire cities
- resulting in significantly improved flow of traffic

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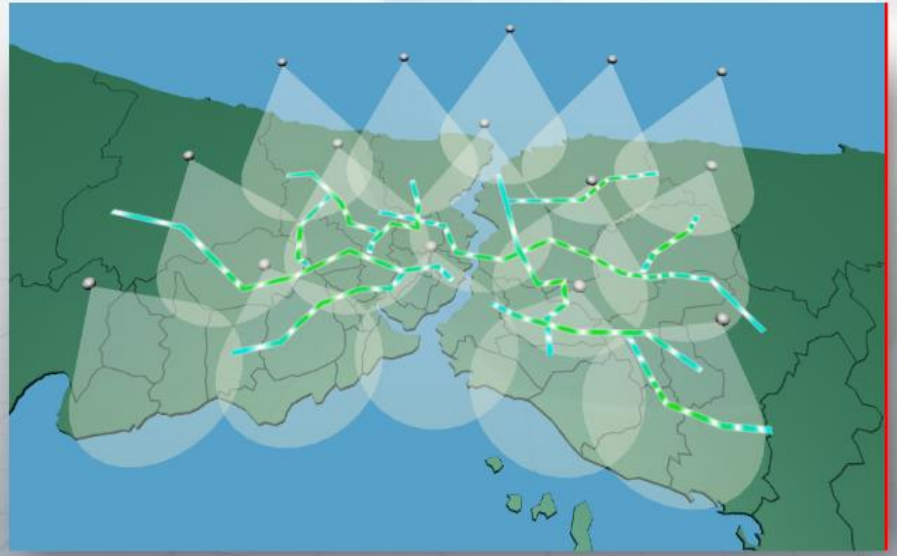
Hypersphere Use Cases



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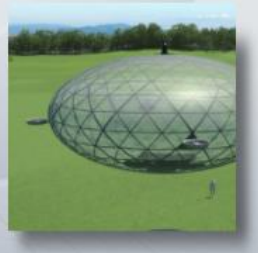
- existing traffic optimization infrastructure limited
- HS fleet monitors entire cities
- resulting in significantly improved flow of traffic

Turn-Key Solution

System Concept

Operations Concept

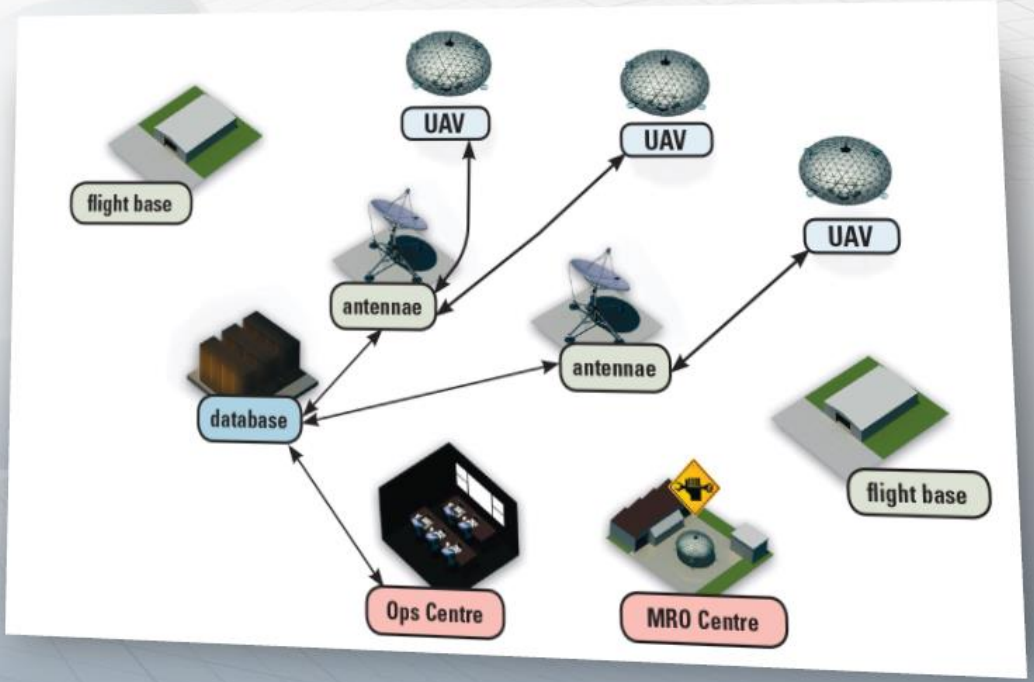


Mission Types

Turn-Key Solution

System Concept

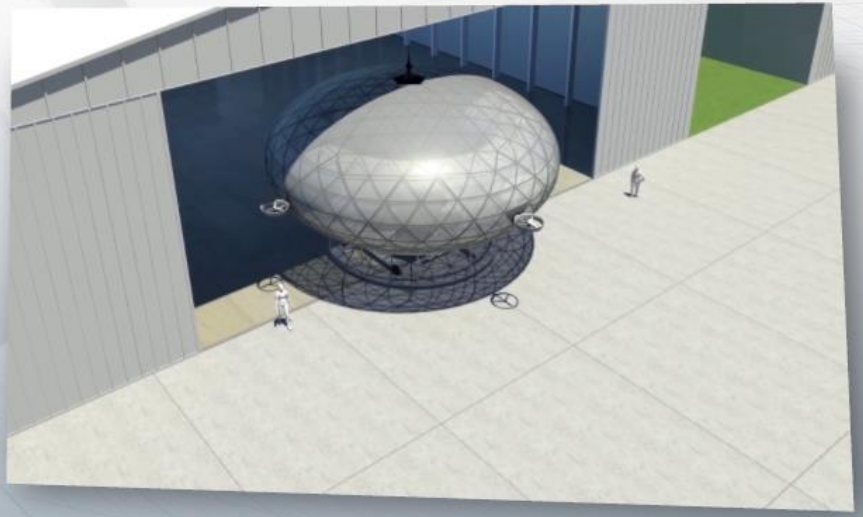
- HS-5k system:
  UAV + COM + DATA + OPS + MRO
  infrastructure
- situational awareness in real time
- modular approach ->
  scalable system



Turn-Key Solution

Operations Concept

- fast turnaround cycle
- no airfield required
- all-weather VTOL
- autonomous flight within mission parameters
- change of mission plan during flight



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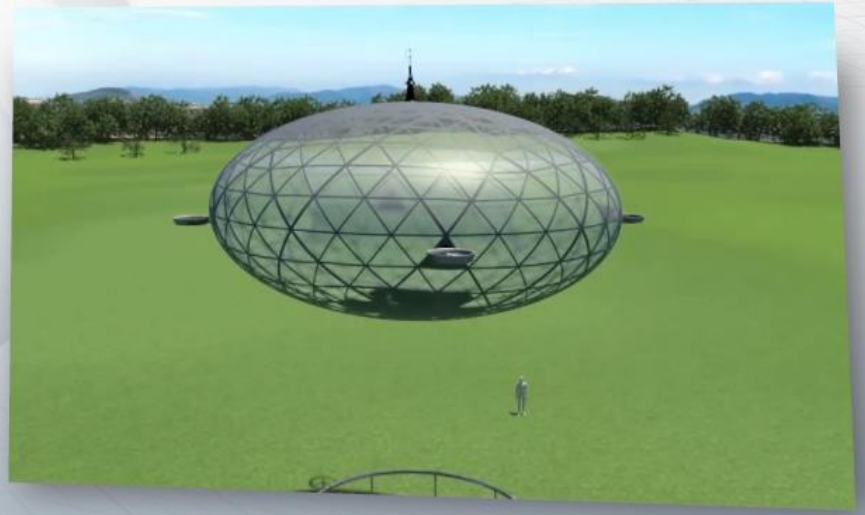

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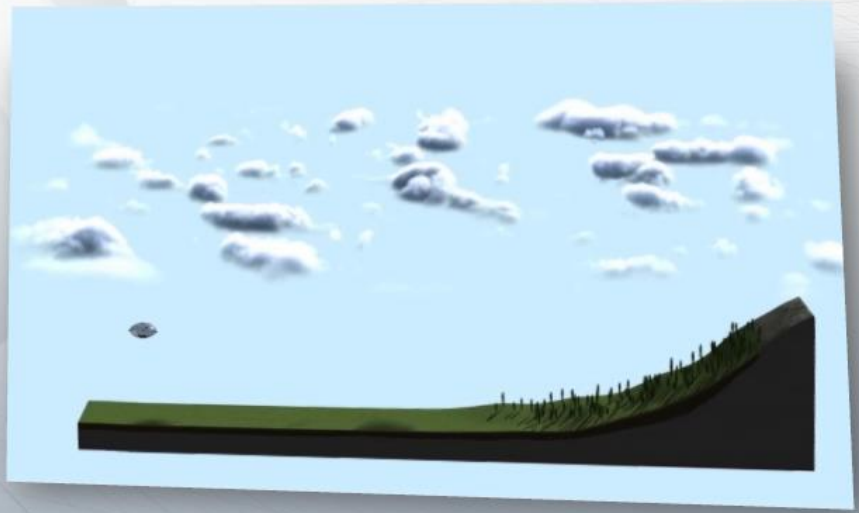

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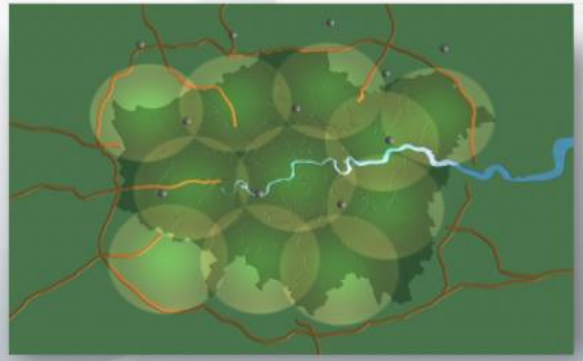
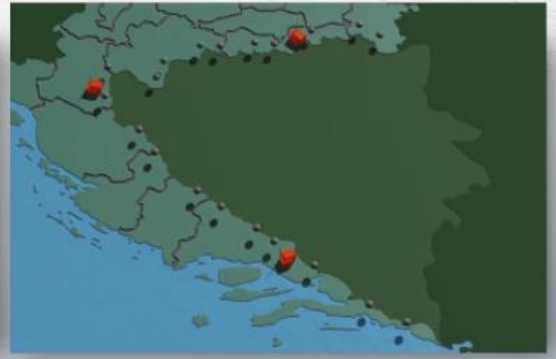
Turn-Key Solution

Mission Types

- two basic mission types:
  - (a) station keeping
  - (b) patrol





HS UASystem Characteristics

Powerfull

Efficient

Available

HS UASystem Characteristics

Powerfull

- endurance: 24 to 100 hours
- payload capacity: 100kg
- standard EO resolution: 2.5cm/px
- standard revisit frequency:
  down to every 2 seconds

HS UASystem Characteristics

Efficient

- LOW COST / EFFICIENT OPERATIONS
  - very low workforce requirements
  - modular system and modular UAV
  - autonomous fleet management
  - fast turnaround cycle
  - 4,400 hours/year mission time

Technical specifications of the HS-5k airship	
Aircraft class	autonomous unmanned airship, MALE
Payload	100 kg, optical and thermal imaging set
Availability	At least 4,400 hours per year (>50%)
Nominal altitude	2 to 5 km above sea level
Cruise airspeed	40 km/h
Max airspeed	65 km/h
Endurance	24 to 100 hours, weather dependant
Take-off and landing	VTOL, with wind up to 40 km/h
Operating temperature	-40 to +60 degrees Celsius
Design concept	Subsystem modularity
Reliability	Very high, flight-critical redundancy
Maintenance cost	Approx.100 US$/h
ATC	Mode S/C transponder or VFR
Mission plan	Update possible in flight
Communication	Data: 10Mbps @ 50km, TT&C: LoS, NLoS
Range	4,000 km

HS UASystem Characteristics

Available

- ITAR-free technology
- user control over entire data chain
- you fly: own workforce and trainers
- 1yr+ spares stockpile

Thank You!

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