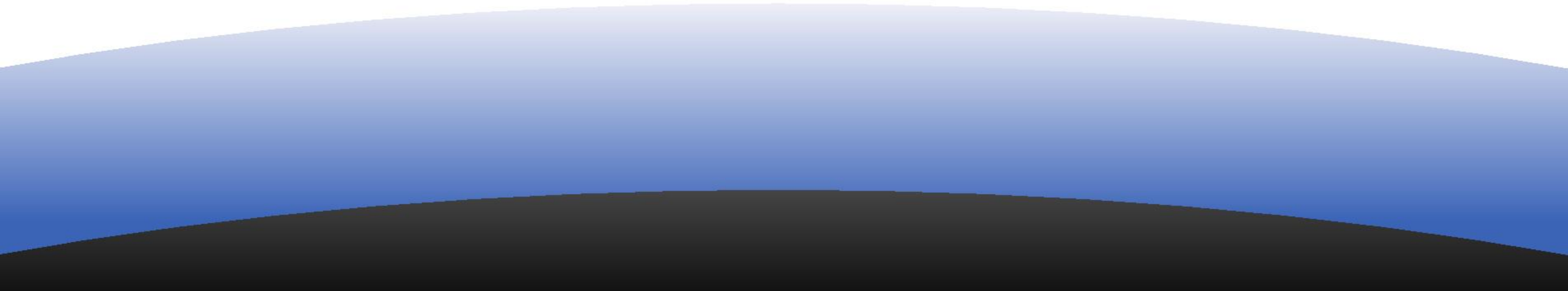
# STRATOSYST

HAPS SERVICES FROM STRATOSPHERE



# Problem

## Today's technologies utilized for telco, Earth observation or navigation have certain limits.

1

**Satellites**

high latency, limited data capacity, low temporal resolution, Space debris, high CAPEX

2

**On-Ground Infrastructure**

limited reach, damage-prone, high CAPEX

3

**Drones**

highly limited reach, operation constraints

=

**These limits prevent current technologies to extend their services on a real global scale and at the highest possible quality at the same time.**

# Solution = HAPS(High-Altitude Pseudo satellite)

## What is HAPS

HAPS is basically an aircraft flying over specific location at an altitude 18 – 20 km above the ground

for weeks - months.

**There are 2 main types of HAPS**

Lighter than air (Airship or Balloons) or Heavier than air (aircrafts). Companies across the world are working on both types of the platforms

## What HAPS solve

**HAPS** are part of the **infrastructure** that we use every day for **telecommunication, weather prediction, traffic, maps etc.**

Technology like satellites, ground stations or drones can't cover specific large areas (cities or remote areas) for a long period of time (days – months). Satellites are great for global coverage, drones for short missions.

HAPS platforms fill this gap. The platform can be used for 5G data or surveliance missions, can be launched within a day and can operate remotly.

**Early adopters** of these platforms are mainly telecommunication companies (AT&T, T-mobile), Earth observation companies (Planet, Spire) and goverments or agencies (NATO, ESA, NASA).

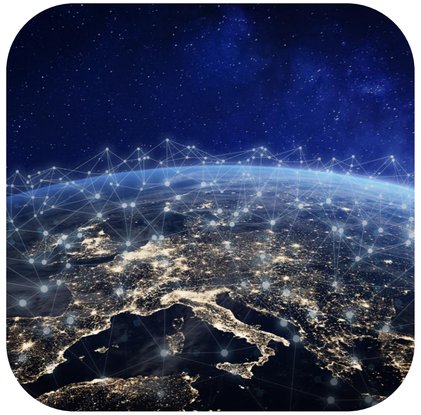
# Specific Use Cases

What HAPS can do

## Earth Observation

Live monitoring

HAPS will provide customers currently using only satellite pictures with **better spatial and temporal resolution**. The data can be used by Insurance companies, marketers, farmers or traffic monitoring companies.



## Telecommunication

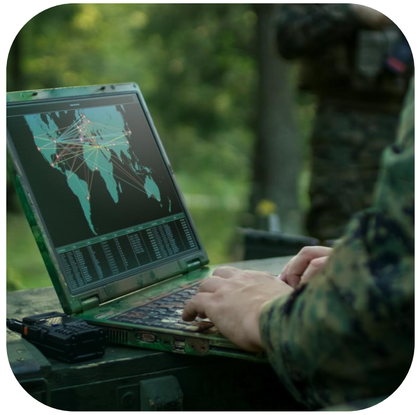
Digital divide

HAPS will create **additional layer of infrastructure to the satellite and ground network** that we are using today.
3b people are lacking connectivity and HAPS will help with bringing these areas online

## Civil Security

Safety

**Natural disasters, illegal migration, search & rescue missions or wild fires** are just shortlisted use cases where the HAPS can help police or fire brigades to solve the problem faster and save lives and assets.



## Defense

Intelligence

We can see now how important is tt to have effective intelligence and how stelth target verification on survelliance can help with ddecision making in warfare.

## IoT

Smart cities

Autonomous mobility, agriculture or delivery are booming. These activity are highly dependent on stable and fast internet connection that is expensive to build. HAPS can offer these services from the sky.

# The Company

Not really a garage company

**Project started in 2017**

**Company established in 2019**

**HAPS Alliance members**

**Contracts**

**Czech MoD contract – HAPS prototype for ISR (€ 4M)**

**European Defense Fund – propulsion system (€ 700K)**

**Projects**

**Deloitte study -** HAPS for FRONTEX

**JARUS** – Certification for HAPS

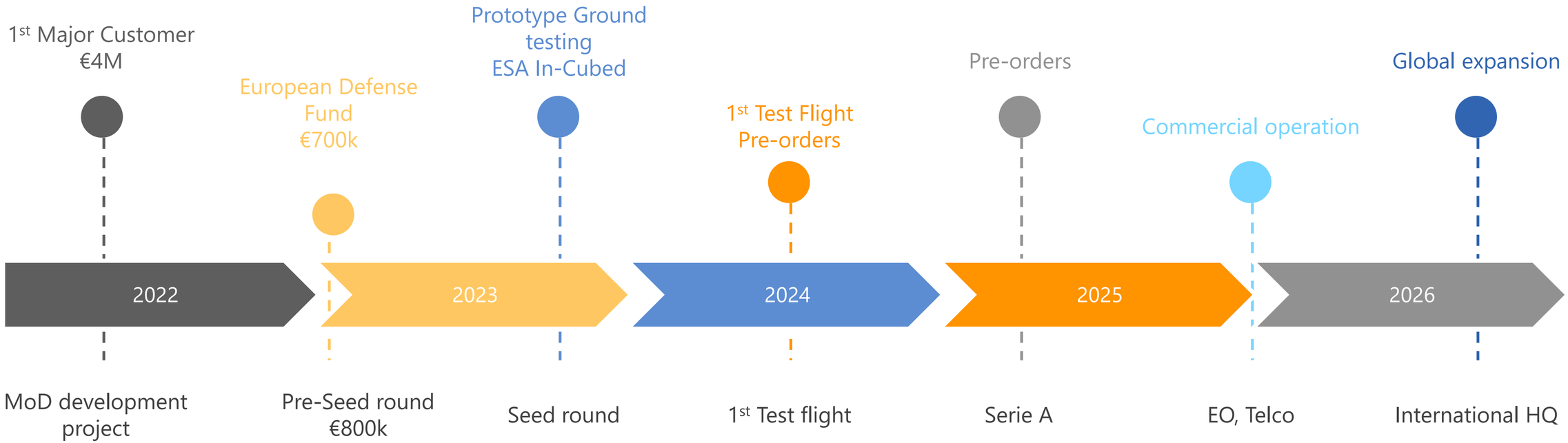
**HAPS Alliance**

**National Competence Centre – Optical Payload (€ 2M)**

# Timeline

Almost there

We work on several projects with strategic customers.



# Products

From Testing to payload


## Skyrider

**Civil HAPS platform**

designed for EO, telecommunication and navigation for payloads up to 20 kg and missions up to 6 months.

TRL 7 in 2025

## Stratom

**Development project for Czech MoD**

HAPS prototype designed for military & security applications (ISTAR). Intended for use by Czech army and NATO allies.

TRL 9 in 2024


## Optical payload

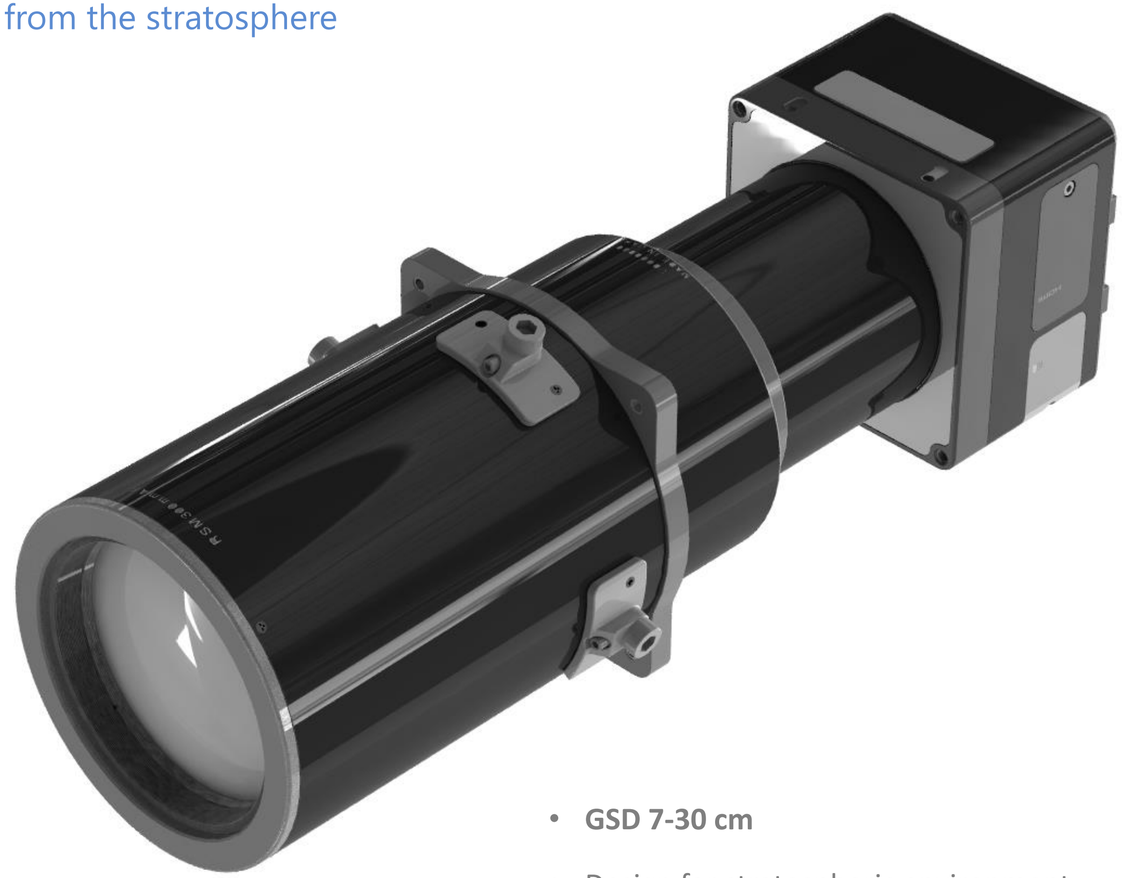
**Development of multi-purpose optical payload**

with interchangeable lenses for resolution up to 7 cm. Designed for stratospheric environment, usable for space & ground applications as well.

TRL 7 in 2024

# HAPS Payload

HD Imagery from the stratosphere

**Stratospheric environment is challenging for payload.**

Since the EO market for HAPS is growing, we decided to built on space technologies and modify them to optical payload designed specifically to the stratosphere

- **GSD 7-30 cm**
- Design for stratospheric environment
- Highly reliable camera designed for geo-mapping
- Multiple optics: 150 – 860 mm
- Market ready in 2024