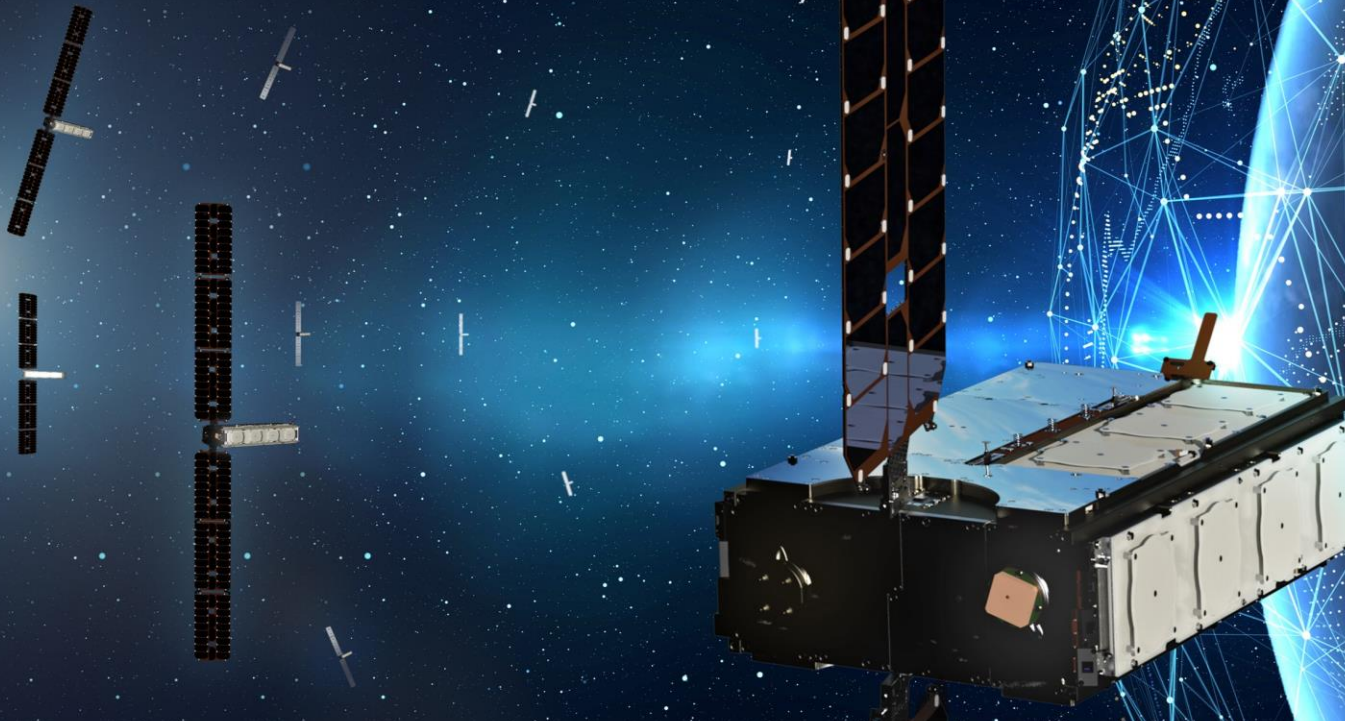


GomSpace and Missions



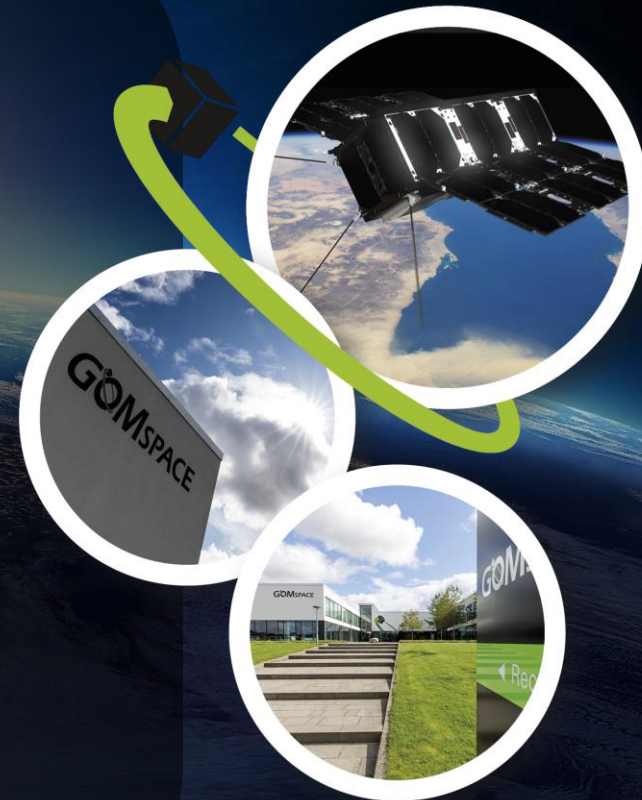
5th Virtual UNISEC-Global Meeting, January 16th 2021

Dennis Elgaard, Sales Director

email: del@gomspace.com

| GOMSPACE AT A GLANCE |

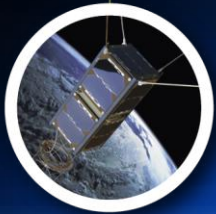
- Globally leading manufacturer & supplier of nanosatellite solutions
- Founded in 2007 and listed at Nasdaq stock exchange in Stockholm (GOMX) in 2016.
- Our global footprint:
 - HQ, design and production in Denmark
 - Propulsion technology in Sweden
 - Satellite operations in Luxembourg
 - Sales office in Washington
 - 150 employees in total
- Our positions of strengths:
 - Miniaturised satellites ready for constellations
 - Radio technology / software defined radio
 - Production capacity in place
- Our traction:
 - Very successful in orbit validation program (GOMX)
 - Customers in more than 55 countries



MISSION FLIGHT PROGRAM

GOMX-1

2013



Technology:

- Core Avionics

Applications:

- ADS-B receiver

Operations:

- File based operations

GOMX-2

2014



Technology:

- Core Avionics
- Drag enhancing device

Applications:

- Quantum communications

Operations:

- *Lost in launch failure*

GOMX-3

2015



Technology:

- Software defined radio
- 3-Axis control
- X-band downlink

Applications:

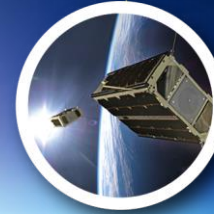
- ADS-B receiver (2nd gen)
- Spectrum monitoring

Operations:

- Automation nominal ops.
- Active drag management
- Autonomous target tracking

GOMX-4

2018



Technology:

- Inter-satellite linking
- Cold gas Propulsion
- Star-tracker

Applications:

- ADS-B Receiver (3rd gen)
- Hyper-spectral Camera
- RGB Camera
- AIS

Operations:

- Station keeping
- Manoeuvring
- Drag management
- Multiple payloads at target

GOMX-5

2021



Technology:

- Optical Communication
- Electrical Propulsion
- Wideband radio

Applications:

- Wideband communication

Operations:

- Increased autonomy
- ISL networking
- Re-entry manoeuvre

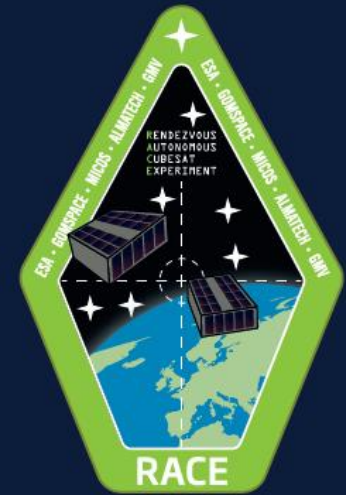
GOMX-5 MISSION



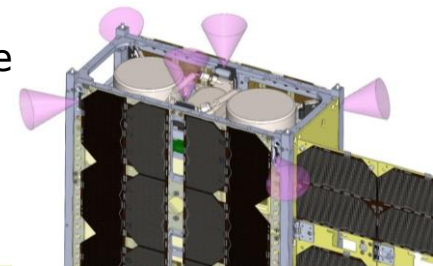
- **Joint ESA and GomSpace Mission – 12U CubeSats**
- **Constellation technology validation**
 - Demonstrate large orbital transfer maneuvers in LEO
 - High speed intersatellite linking
 - Hybrid propulsion
 - GNSS Precise Point Positioning
 - 8 different payloads



RACE MISSION

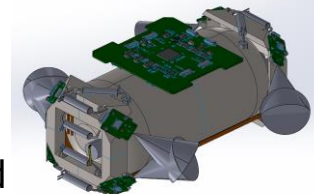


- **ESA Rendezvous Autonomous CubeSats Experiment – 2x 6U CubeSats**
- **GomSpace 6DOF propulsion system**
 - The two satellites are launched together in Low Earth Orbit.
 - After the initial commissioning phase, the spacecraft will perform the rendezvous and docking (RVD)
 - Perform close fly around (CFA) experiments

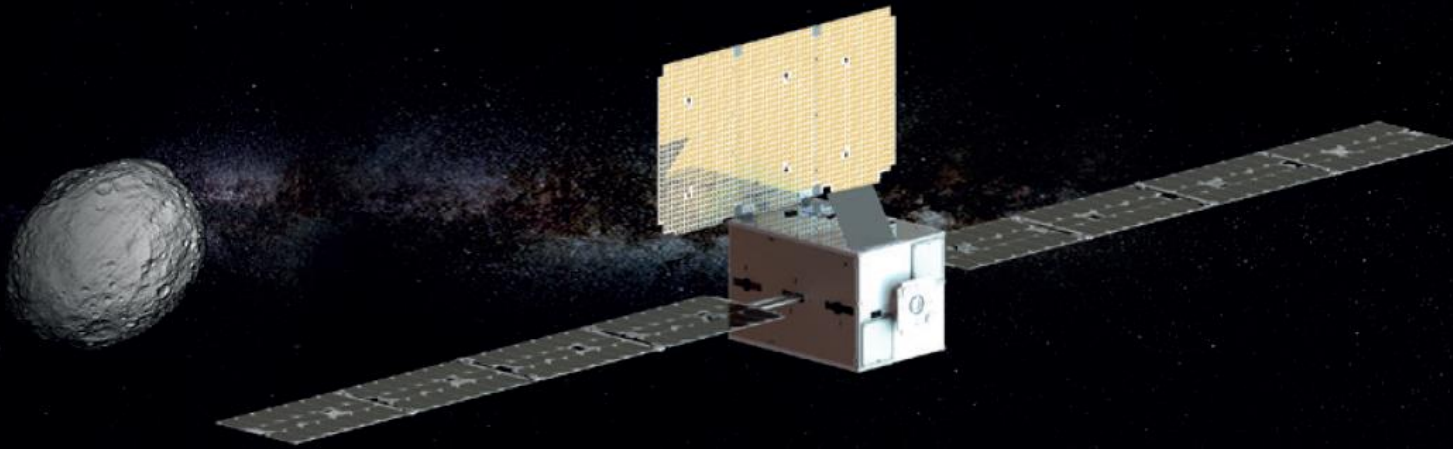




- **6U nanosatellite for ESA's Hera mission (Juventas)**
- **Passenger on the ESA Hera spacecraft**
 - Juventas will be deployed at rendezvous with Didymos binary asteroid
 - Will operate from a stable terminator orbit around the Didymain asteroid
 - At the end of its mission lifetime (1-3 months), Juventas will land on the surface Didymoon. High rate sensors will monitor the impact bouncing and landing events for information on asteroid surface properties



M-ARGO MISSION



- **ESA Miniaturized Asteroid Remote Geophysical Observer (M-ARGO) - 12U**
 - M-ARGO will demonstrate the ability of a small CubeSat to navigate to an asteroid and perform remote sensing observations by itself
 - Direct-to-Earth X-band communication
 - High-performance deep-space electric propulsion
 - Imaging spectrometer payload for in-situ resource observation
 - Autonomous optical navigation experiment during cruise

| NEXT DECADE – CONTINUED DISRUPTION |

Communication

- Allowing advanced high speed, multi-beam solutions for SATCOM

Propulsion

- Allowing very advanced missions both in LEO and beyond

Payloads

- Continued miniaturisation and increased performance

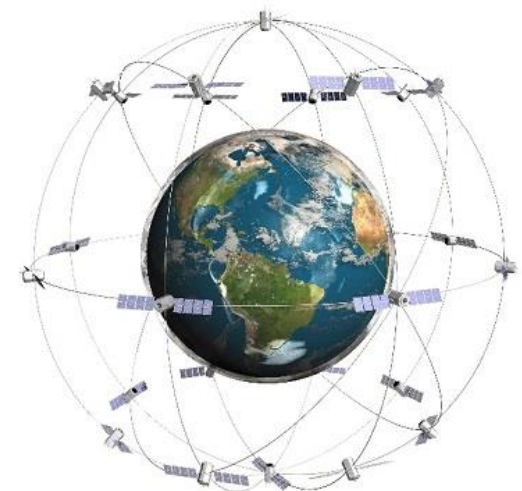
Launch segment

- Emergence of dedicated microsat launchers

Ground segment

- Autonomous operation of multiple satellites - HOOP
- Integrating space with the “business segment”

New space ready for business!





*"WE HELP TEAMS ACROSS THE GLOBE
ACHIEVE THEIR GOALS IN SPACE"*

Dennis Elgaard
del@gomspace.com

GomSpace A/S | Langagervej 6 | DK-9220 Aalborg East | Denmark
info@gomspace.com | T: +45 71 741 741

gomspace.com