
UNLOCKING OHV'S POTENTIAL IN THE YEARS AHEAD

CAPITAL MARKET DAY 2023, JANUARY 18

MARCO FUCHS, CEO

VERY POSITIVE LONG-TERM OUTLOOK FOR THE SECTOR

- Rising importance of space applications is well reflected in growth projections for the global space economy
- The number of satellites to be launched will increase from 5,519 (2012 – 2021) to 24,468 (2022 – 2031)
- Future satellite market value will continue to be driven by government satellites
 - 6,600 satellites to be launched over the next ten years for civilian and defense government agencies (market value of USD 289 billion)
 - 27% of the satellites to be launched by 2031 will be government satellites (72% of the total market value of USD 400 billion)
 - At USD 252 billion, the 6 space powers (USA, China, Europe, Russia, India and Japan) will concentrate most of the government market of USD 289 billion

Trends for the satellite industry 2022 - 2031



2,500 satellites will be launched on average every year by 2031



Decade to decade growth:

X 4.5 in #

X 3.0 in kg

X 1.5 in \$



USD 400 billion of revenues are expected for the decade (manufacturing & launch)

→ The space industry will grow by almost 50% over past decade

ESA MC RESULTS DRIVE STRONG ORDER INTAKE EXPECTATIONS

- Member states committed a record amount of **EUR 16.9 billion** for the next three years
 - Seen as a positive outcome given the comparatively high economic uncertainties compared to previous Ministerial Council Meetings
 - Countries with significant OHB undertakings kept or increased their share of the budget
- Countries subscribed to programs and projects prioritized by OHB, e.g.
 - Continuous strong commitment to Earth observation domain
 - Support of the European secure connectivity constellation (IRIS²)

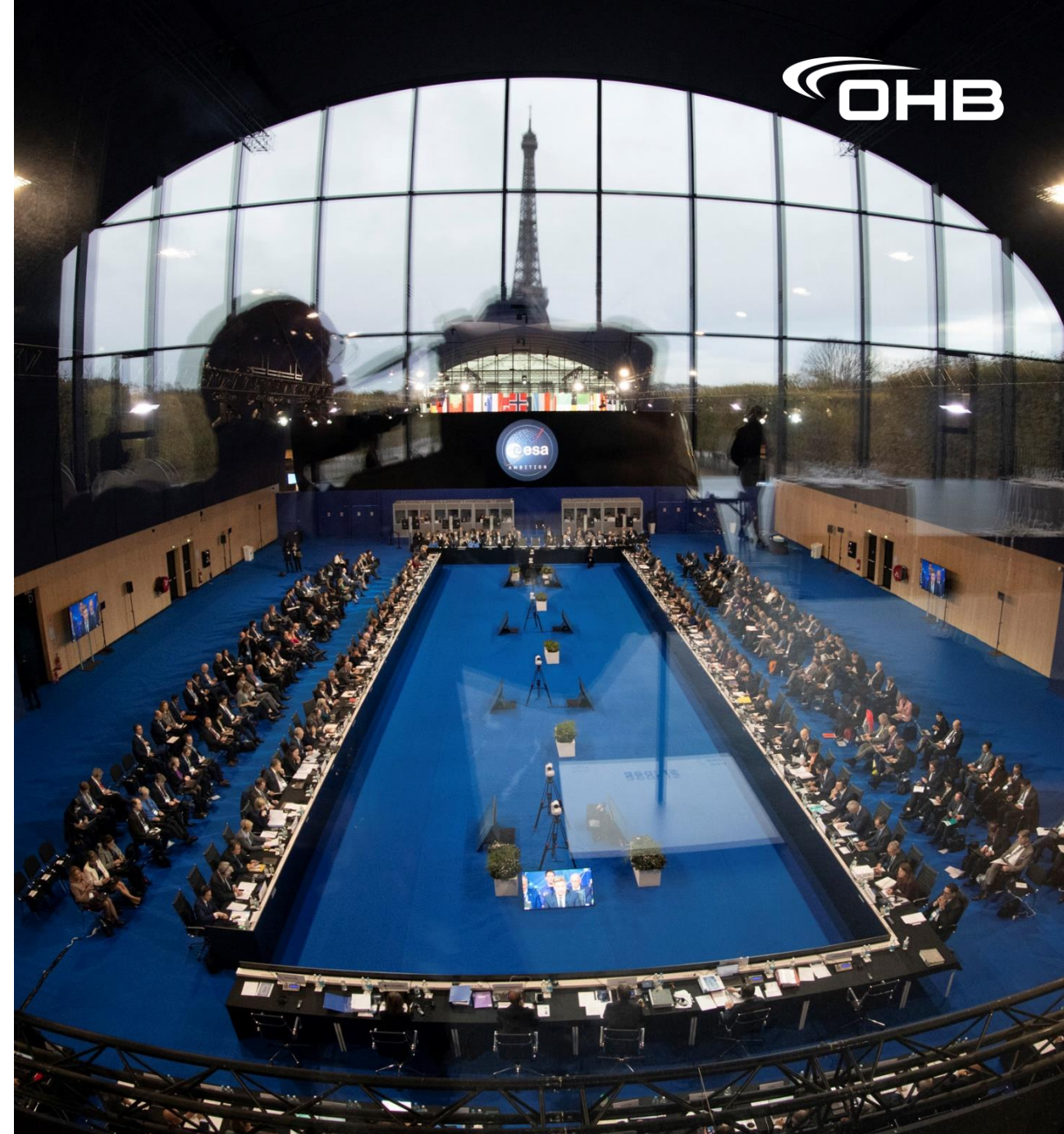
Project implementation and subsequent contracts expected for years 2023 and 2024

+17 %

Overall budget increase

21 %

Germany remains largest contributor



BRINGING EUROPE'S SPACE AMBITIONS TO THE NEXT LEVEL

The increasing ambitions of Europe in space provides further opportunities for the Group

- The strategic importance of space is recognized by a growing number of stakeholders from the public and private sector:
 - Space assets can support how we address some of the greatest challenges we face, including climate change and crises response
 - As space becomes an integral part of our lives and security, protecting vital space infrastructure is a priority.
- ESA addresses this development with a progressive vision for Europe's role in space and for the role of space within our daily lives
- This vision is represented by the three **Accelerators**:
 - “Space for a green future”
 - “Rapid and resilient crisis response”
 - “Protection of space assets”



SUSTAINABLE GROWTH FOR THE SECTOR IS DRIVEN BY THE FOLLOWING GLOBAL CHALLENGES



Life on Earth

- Climate change
- Resource shortage



Security

- Reconnaissance
- Early-warning
- Space safety



Digitalization

- Capacity increase
- Increase in data security



WHAT ROLE IS OHB TAKING OVER IN THIS SITUATION?

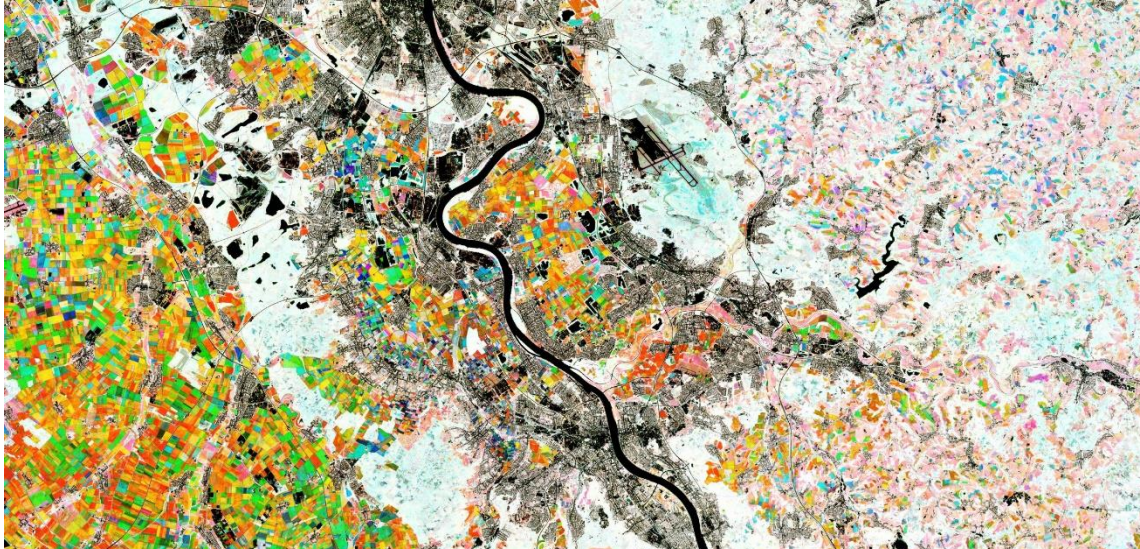
HOW DOES THE COMPANY USE ITS KNOWLEDGE AND SKILLS FOR THE BENEFIT OF ALL?



LIFE ON EARTH: ENVIRONMENTAL MONITORING

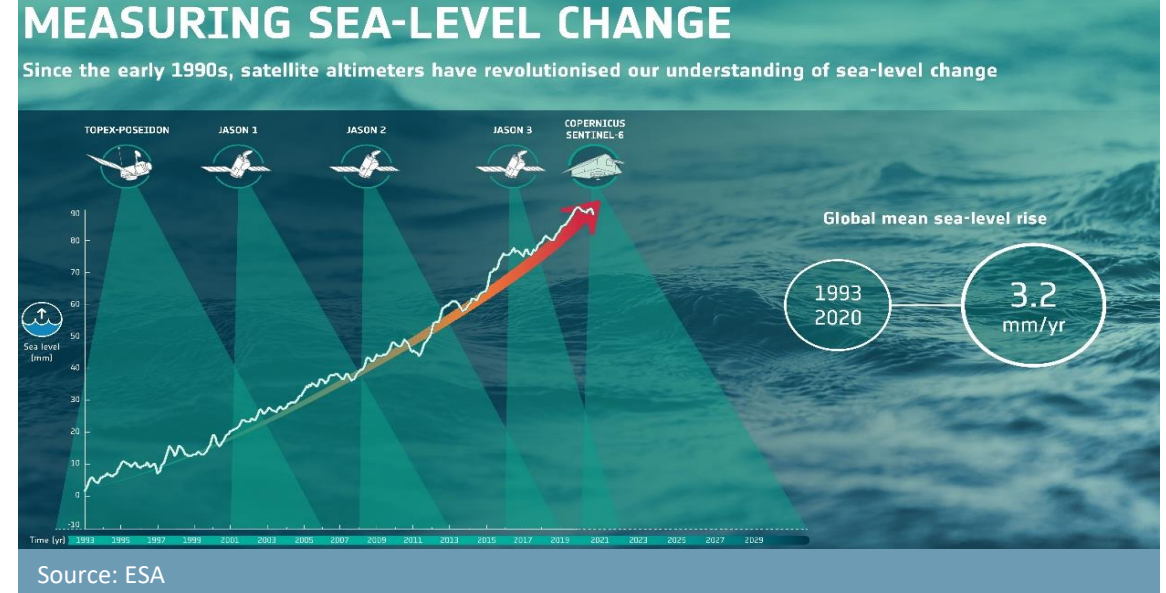
EXAMPLE: CLIMATE CHANGE INCREASES THE NEED FOR ACCURATE SATELLITE DATA

- Global situation: **More than 3.3 billion people are highly affected by climate change impacts** such as droughts, heat waves or floods*
- Situation in Germany 2022: Until October we had higher temperatures than in any other year before since records began (140 years ago)
 - Risks to health and ecosystems from extreme heat, water shortages and harvest losses



Source: ESA, CC BY-SA 3.0 IGO

- Benefits of satellites: Ideal overview from above and generation of very long time series with excellent spatial coverage
- **Satellites provide 60 % of the essential climate variables**, these values can be measured exclusively from space:
 - Water temperature, concentration of greenhouse gases in the atmosphere, wave height, ...

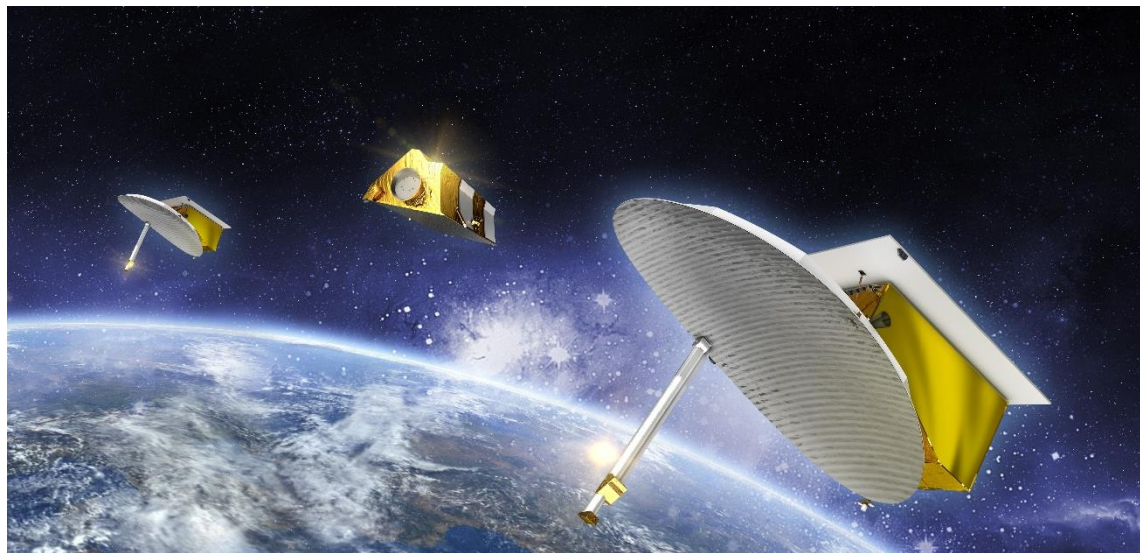


*IPCC Sixth Assessment Report, February 28, 2022

SECURITY: RECONNAISSANCE AND EARLY-WARNING

EXAMPLE: WAR IN UKRAINE

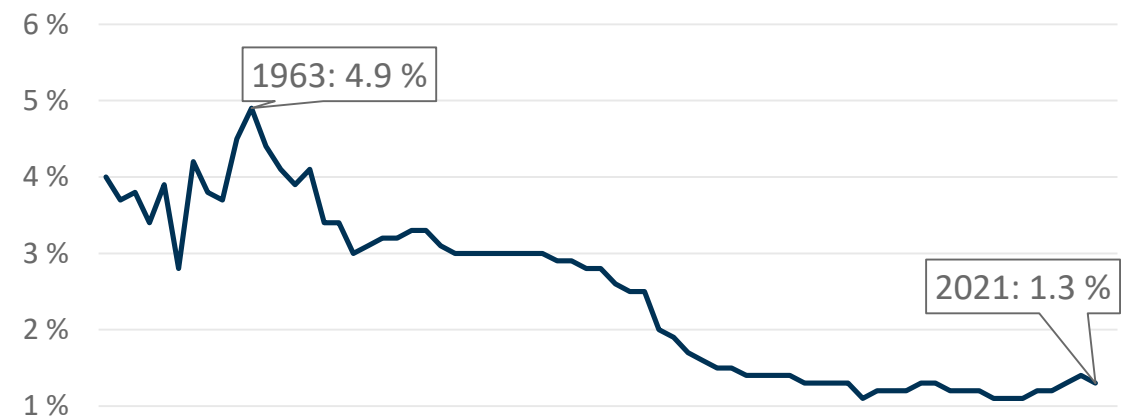
- The USA and NATO have declared space and cyberspace as own domains aside army, navy and air force
- Upcoming decades require extraordinary capabilities and capacities to engage and win in an increasingly multi-domain battlespace
- Germany plans to invest in order to adapt the defense capabilities of the Bundeswehr to these multi-domain scenarios and is currently analyzing its national needs and needs in view of European sovereignty



SARah constellation

In this respect: Space plays a key role

- Satellites are non-intrusive instruments for reconnaissance and early-warning, compared to e.g. aircraft and drones
- **Additional/higher budgets** are established:
 - “Special fund” for defense activities (**EUR 100 billion**)
 - Commitment to NATO spending goal (**2 % of GDP**)
 - Additional EC budget for IRIS² (European sovereignty)



Military expenditure as a share of German GDP

Source: Sipri

DIGITALIZATION: TELECOM

LIVING IN AN EVER MORE CONNECTED WORLD

Recent years saw a major shift in the landscape of the telecom sector

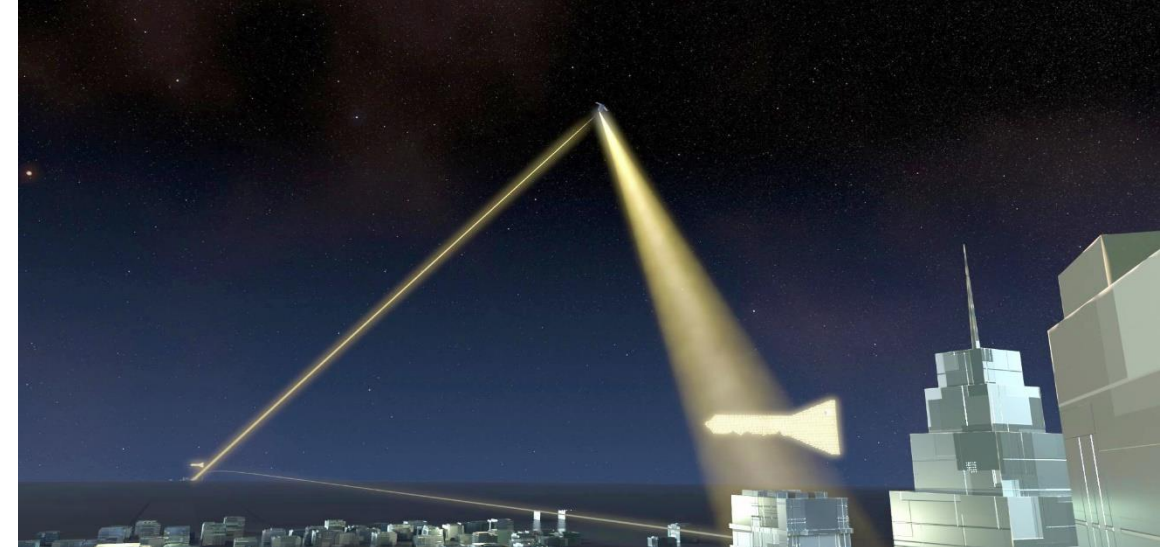
- Higher requirements for data security, stability, network resilience, control of the network, governmental use
- New technical approaches lead to more diverse possibilities to realize a mission goal, e.g. geostationary satellite vs. constellation of small satellites in low-Earth-orbit



EDRS-C satellite, developed and built by OH B System

Space-based telecom solutions are essential to meet this shift by ...

- ... providing disaster resilient communication, data integrity, worldwide accessibility and sovereign capacity
- ... enabling new applications for mobile bandwidth and security
- ... functioning as the basis for the development of technologies that provide the best possible protection for the security of systems



Quantum Key Distribution using SAGA

Source: ESA

WE CONTINUOUSLY EXECUTED ON MULTIPLE PILLARS OF OUR STRATEGY THROUGHOUT THE YEAR



WE IMPLEMENTED ORGANIZATIONAL CHANGES TO SUPPORT OUR STRATEGY

Daniela Schmidt joined the Management Board on January 1, 2022. Sustainability in particular will assume significantly greater importance within the Group

- Establishment of a dedicated department
- Discussions with customers, employees and other stakeholders guarantee target-oriented strategy development



Daniela Schmidt signs the Statement for a Responsible Space Sector on behalf of OH B

Dr. Hans-Jörg Königsmann, a former long-time SpaceX executive, joined the Supervisory Board since June, adding experience and know-how, especially in the areas

- US space environment, especially in the New Space area
- Technical launcher development



Dr. Hans-Jörg Königsmann

STRATEGY IMPLEMENTATION LEADS TO OPERATIVE SUCCESS



PERFORMANCE

- Improve product quality and project management
 - Increased efficiency through streamlined processes lead to more successful project execution in terms of schedule, quality and cost
 - Solution-oriented approach based on increased transparency, leading to targeted and faster intervention in case of issues



SCOPE

- Develop downstream portfolio
 - GEOSYSTEMS: Adding Earth observation data services to the Group
 - OrbitSailor: Combining value-added-services with our existing AIS data service
- Extend rocket customer base, full launcher
 - MT Aerospace extended product base toward US customer
 - Rocket Factory Augsburg successfully tested the engine for its microlauncher



GROWTH

- M&A focus on downstream
 - GEOSYSTEMS: Acquisition adds key competencies to support the further development of segment DIGITAL
- Extend footprint in commercial market
 - OrbitSailor's subscription model establishes a new distribution channel
 - Set-up of a production line for additive manufacturing

We demonstrated our technology leadership for Earth and weather observation systems

- Hyperspectral imaging
 - EnMAP entered routine operation showing excellent instrument performance
 - EnMAP laid the foundation for other successful bids (CHIME, constellr)
- Novel MTG sounder instrument attracts international interest



We successfully introduced all of our small satellite platforms to the market

- InnoSat (OH B Sweden):
 - Two successful launches in 2021 and 2022
 - Selected for all mission applications (telecom, science, Earth observation)
 - 5th mission contracted in 2022
- Triton-X (LuxSpace):
First order placed in Q3/2022
- M3 (OH B Italia):
First batch of 12 satellites for an Italian constellation contracted in Q4/2022 with an option for additional 12

Our diversified portfolio enables us to offer solutions for all sizes and applications of small satellites

We expanded our infrastructure and services business in segment DIGITAL

- Leading position for German railway infrastructure offers new growth potential
 - Ongoing digitalization efforts result in higher sales volume for existing business
 - Digitalization opens up new business opportunities in the area of cybersecurity
- Possibilities in the area of satellite operations (SatOp) to grow our market share



BUSINESS UNITS

ACTIVITIES & COMPANIES



GREENER, MORE SECURE AND MORE CONNECTED

- Environmental and weather satellites
- Reconnaissance satellites
- Space safety missions
- Telecommunications and navigation satellites

CURIOUS AND ASPIRING

- Science and exploration missions

ACCESS TO SPACE

- Microlauncher
- Launcher components, tanks and structures

RESOURCE-EFFICIENT FLYING

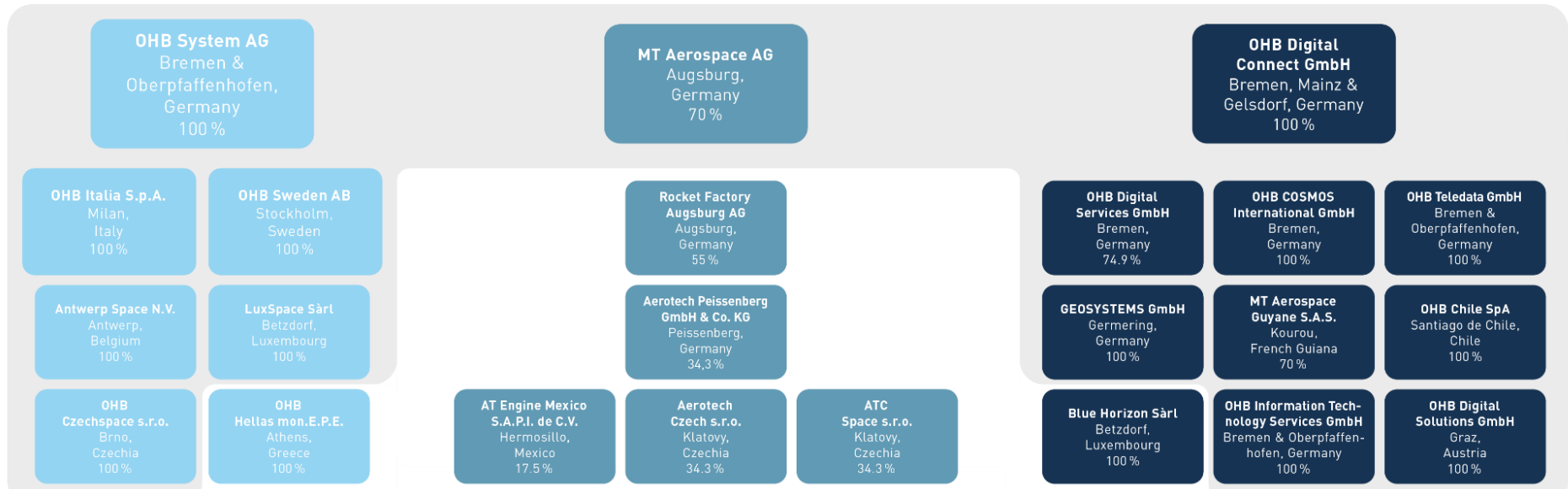
- Aero engine components

ESTABLISHING SECURE CONNECTIONS

- Telescopes, ground systems and satellite operations
- Cybersecurity, encryption and railroad infrastructure

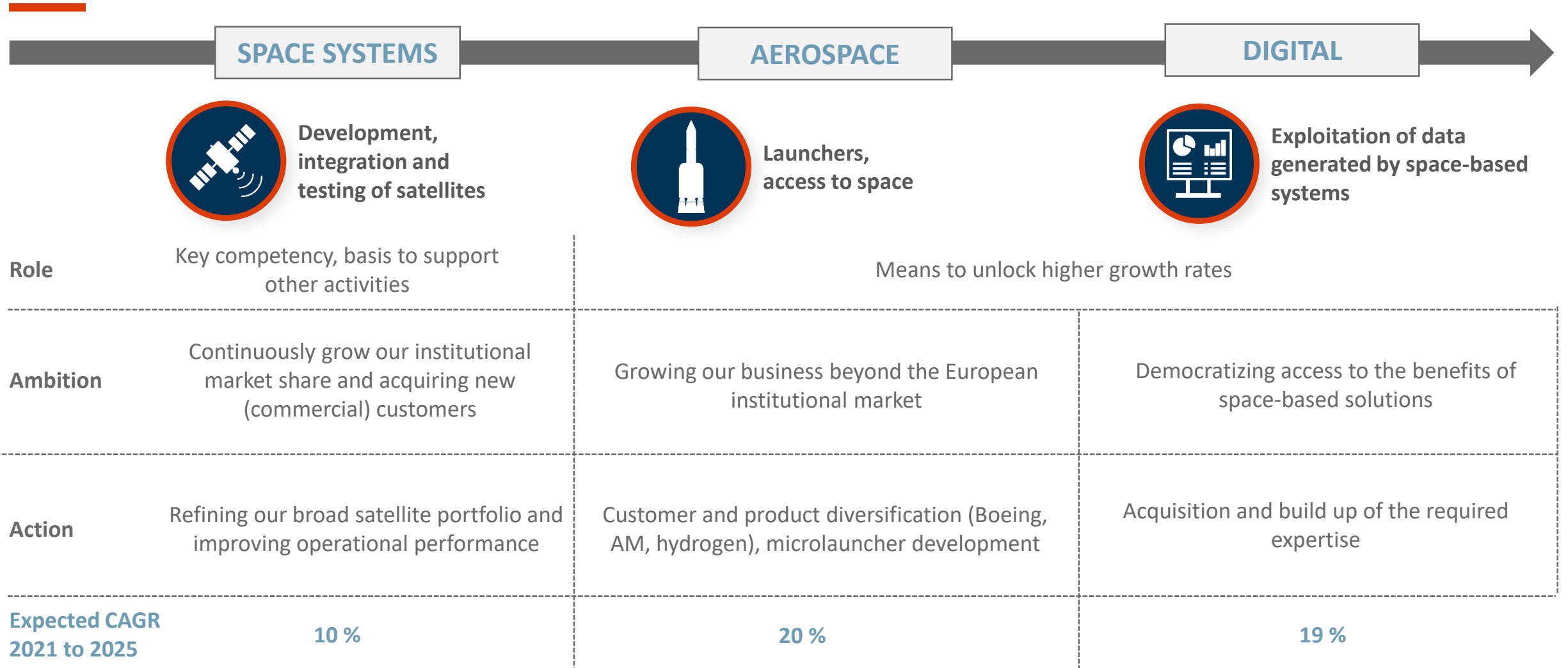
UTILIZE FULL POTENTIAL

- Data analytics, applications and professional services



= consolidated

SMALLER SEGMENTS WITH STRONGER TOTAL REVENUES CONTRIBUTIONS IN THE MEDIUM TERM...



... WHILE SPACE SYSTEMS ALSO FACES MULTIPLE OPPORTUNITIES

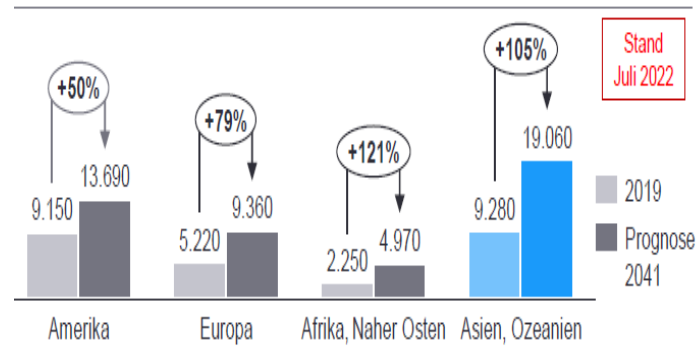
- **Export:**
We developed innovative technologies that attract increasing demand from non-European countries
→ Chance for first export success outside of Europe
- **Commercial market:**
We demonstrated our ability to compete against global players
 - Proven by successful bid for a telecom constellation
 - At present, commercial activities are rather modest, as financing has become more difficult due to rising interest rates
→ Demand for applications still exists, i.e. as soon as the setting changes, we will be able to generate business opportunities
- **New Space and constellations:**
Successful order-intakes in 2022 verified our small satellite strategy
 - Approach: Development of platforms on a decentralized basis
 - All three companies involved (OHB Sweden, LuxSpace, OHB Italia) attracted customers for small platform missions



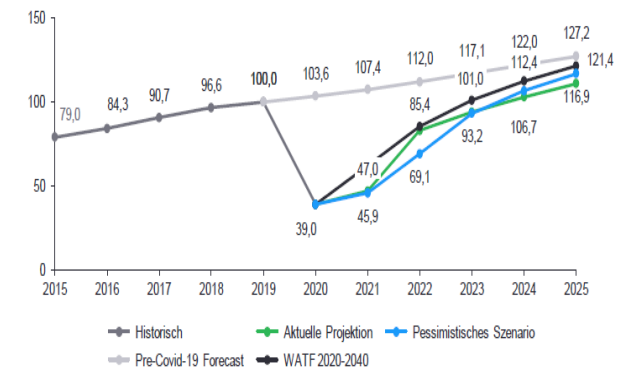
TWO EXAMPLES FOR FUTURE GROWTH PATH AEROSPACE SEGMENT: INTRODUCING ATP SUBGROUP (I)

- Aerotech Peissenberg (ATP) specializes in the manufacture of components for engines and gas turbines.
 - Focus: complex rotating components made from highly heat-resistant materials
 - Engaged and specialized in fast growing macro markets, e.g. emission-saving aviation turbines & industrial strategical gas turbines, with strong industrial US & EU heritage
- Strengthening synergetic fit between space, aviation & mobility with strong orientation on sustainability, supply guarantee & clustering OHB's Bavarian industrial competence
- Unleash cross company competences & utilize cost efficiency with LCC approach

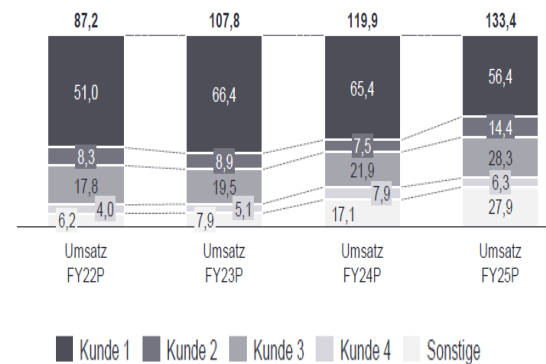
Flugzeugbestände 2019 und Prognose 2041 nach Regionen



Mittelfristige globale Passagierverkehrsprognose (indexiert, 2019 = 100%)



Topline ATP 2022 - 2025

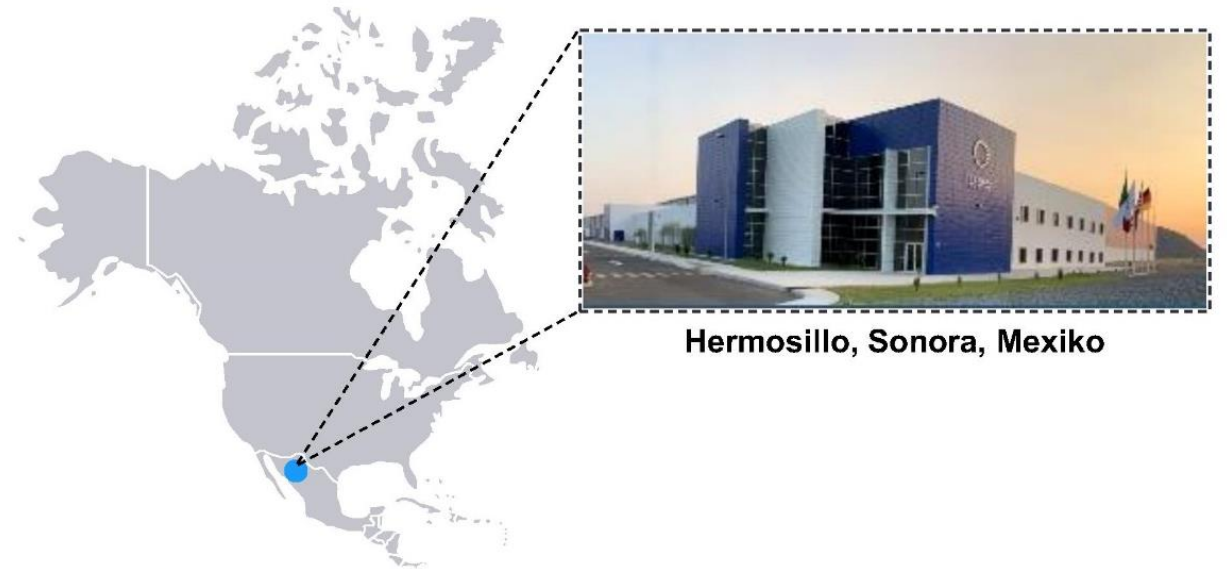


Auszug Produktportfolio der ATP Gruppe



TWO EXAMPLES FOR FUTURE GROWTH PATH AEROSPACE SEGMENT: INTRODUCING ATP SUBGROUP (II)

- ATEM is a 51% subsidiary of ATP with headquarters in Hermosillo , Mexico
- Well-connected local joint venture partner
- The components manufactured by ATEM will be used in the latest generation of single aisle aircraft
- Comprehensive know-how transfer and support by ATP
- Long-term contract with General Electric as partner (purchase volumes fixed)
- Current order-backlog of EUR 2.8 billion
- Increasing importance of the Mexican market as a supplier for the North American industry due to macroeconomic risks (e.g. China/USA relationship)



240 Employees
(as of June 2022)

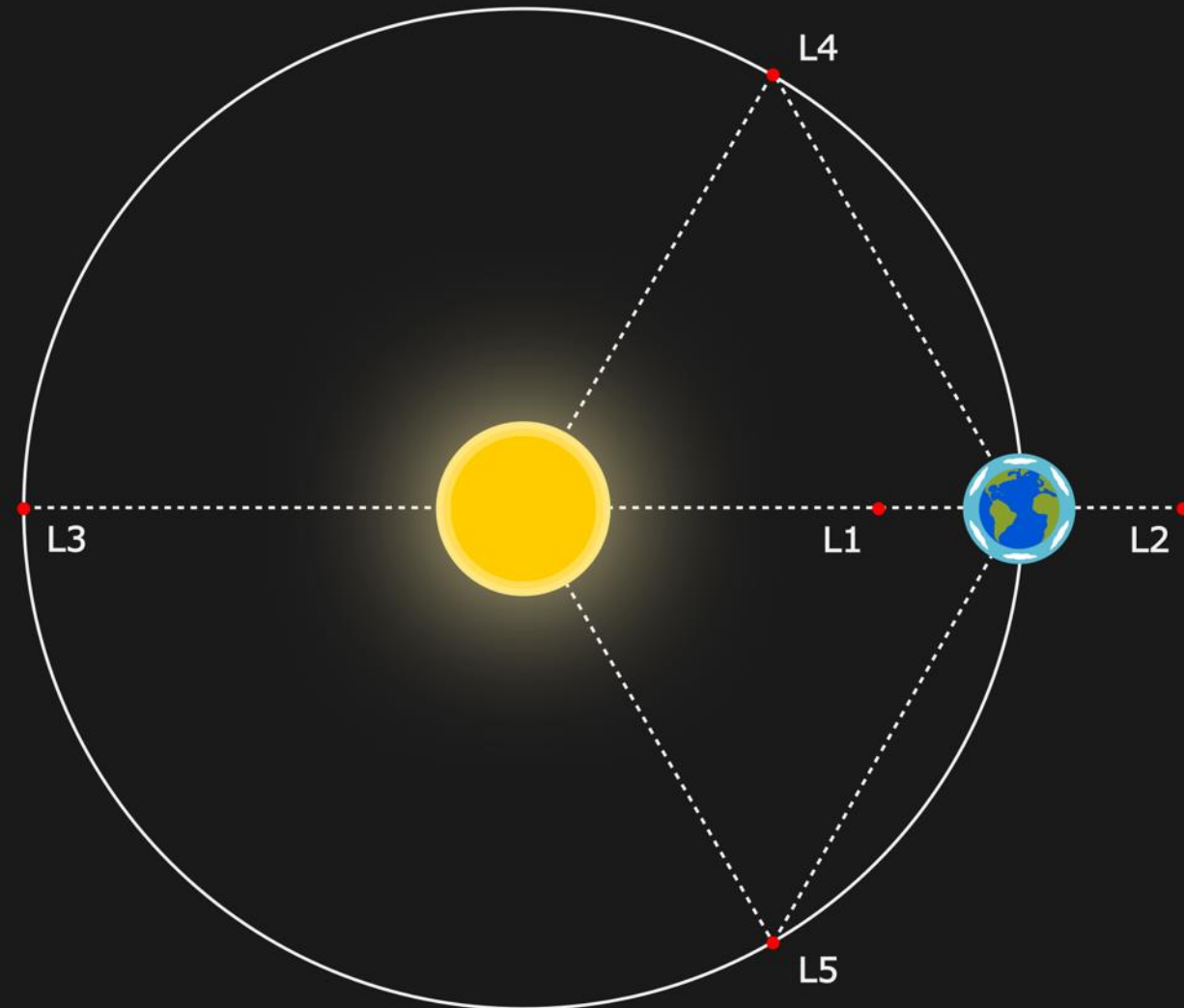
2022 Start of serial
production

55 Machines
installed

2037 Term of customer
contract

TWO EXAMPLES FOR FUTURE GROWTH PATH: VISIONARY FUTURE SPACE PROGRAMMES

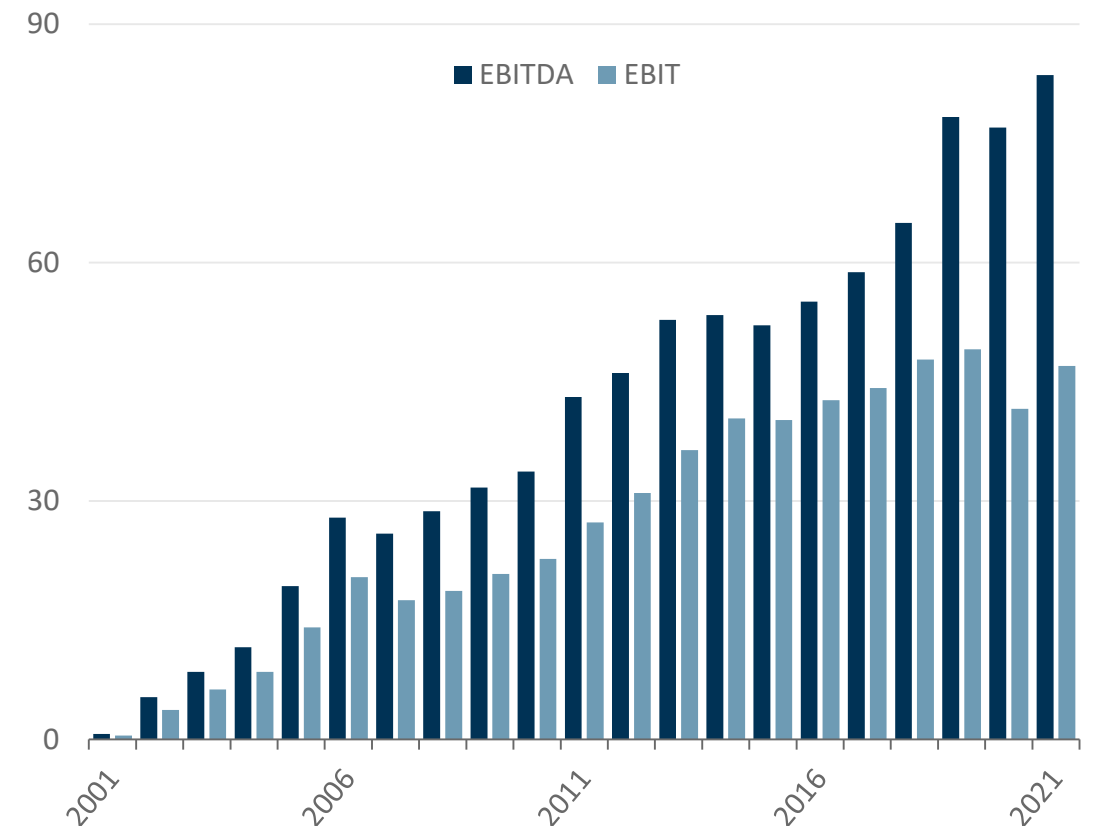
- Mankind changes earth at the latest since settling down for its own advantage (= unconscious geoengineering), climate change is an undesired side effect
- Since the number of people keeps growing, the planet has to be managed
- The Intergovernmental Panel on Climate Change defines geoengineering as “a broad group of methods and technologies aimed at intentionally altering the climate system to mitigate the effects of climate change.”
- OHB has been working on the topic of geoengineering since 2018 and established a geoengineering network in 2021:
 - OHB and eight research institutes (e.g. TU Delft) from five different countries have built a competence network on the subject of space-based geoengineering
 - In parallel with the activities in the geoengineering consortium, OHB is investigating different geoengineering concepts with the goal of comparing them to each other

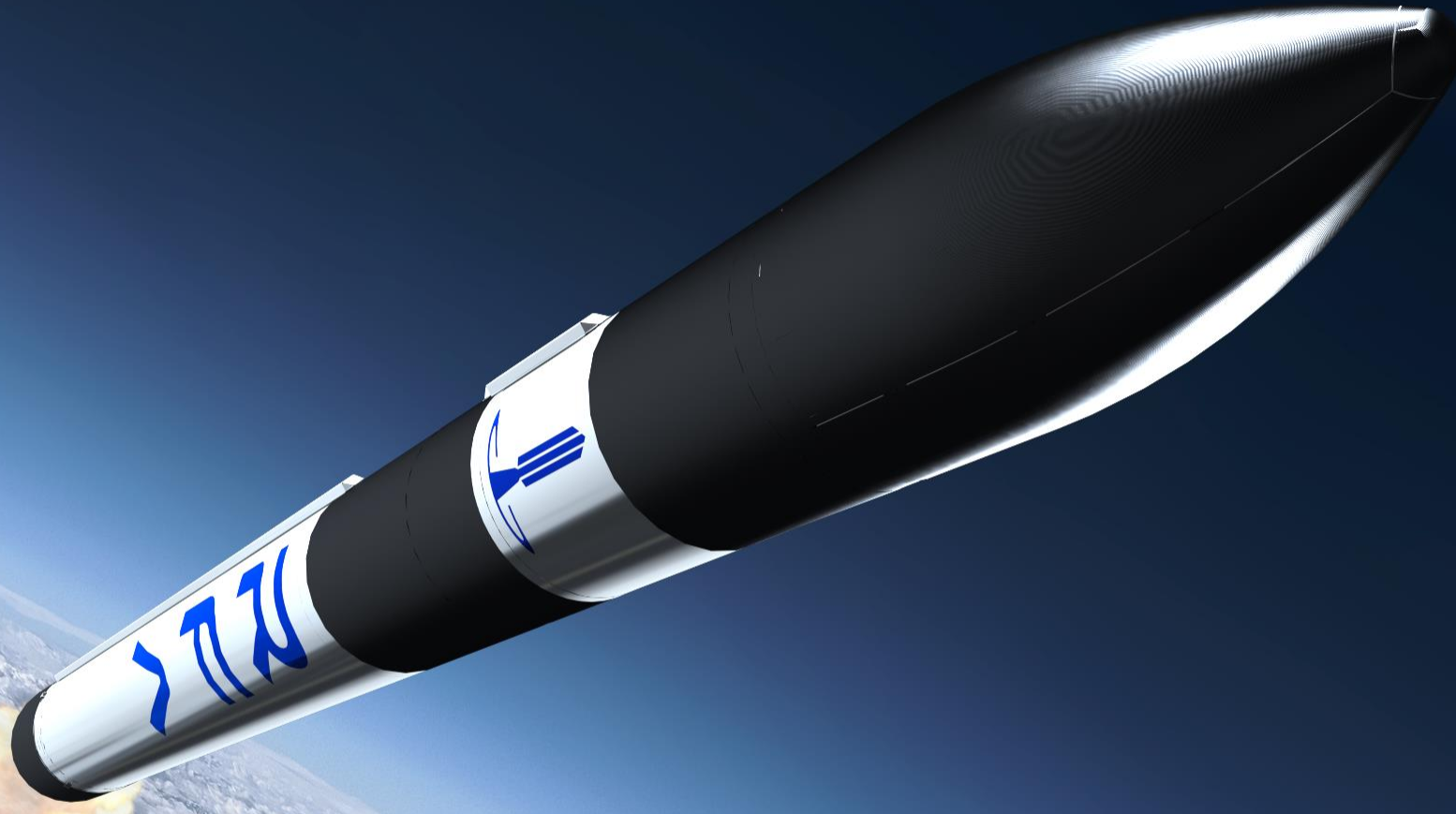


IN THE LAST DECADE OHB ASSUMED A LEADING ROLE IN THE EUROPEAN SPACE SECTOR

- Our growth led to a change of our role and positioning within the sector
 - As one of only three Large System Integrators, we enable new approaches and applications
 - Through our long-established relationship with all European space customers, OHB is well positioned to address market trends
 - Earth observation
 - Small satellites
 - Telecom
- The strong position of our SPACE SYSTEMS segment provides a stable basis for further growth
 - Our increased attention on activities outside of that segment will launch the Group on a comparable growth trajectory in the coming years
 - We are proactively positioning ourselves to become a leader in solving the complex questions of the future (e.g. geoengineering)

Development of EBITDA and EBIT
(in EUR million)





“We utilize space to find answers to the complex questions of our time “

Q&A

Session 1

MARCO FUCHS, CEO
DR. LUTZ BERTLING, CSDO/CDO
KURT MELCHING, CFO
DANIELA SCHMIDT, CSO/CLO