

---

# MINISTERIAL CONFERENCE 2022 AND BEYOND OH B RETURNING TO GROWTH

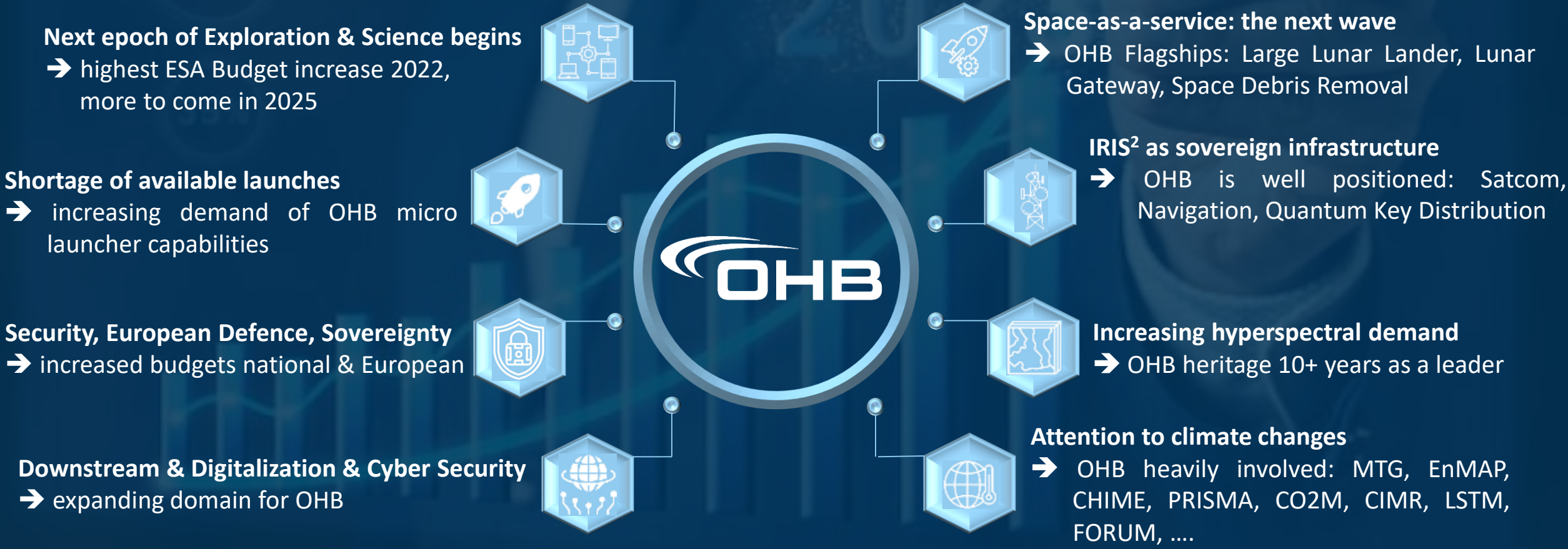
CAPITAL MARKET DAY 2023

DR. LUTZ BERTLING, CSDO/CDO

18. JANUARY 2023

# GENERAL MARKET OUTLOOK

AND OPPORTUNITIES FOR OHB

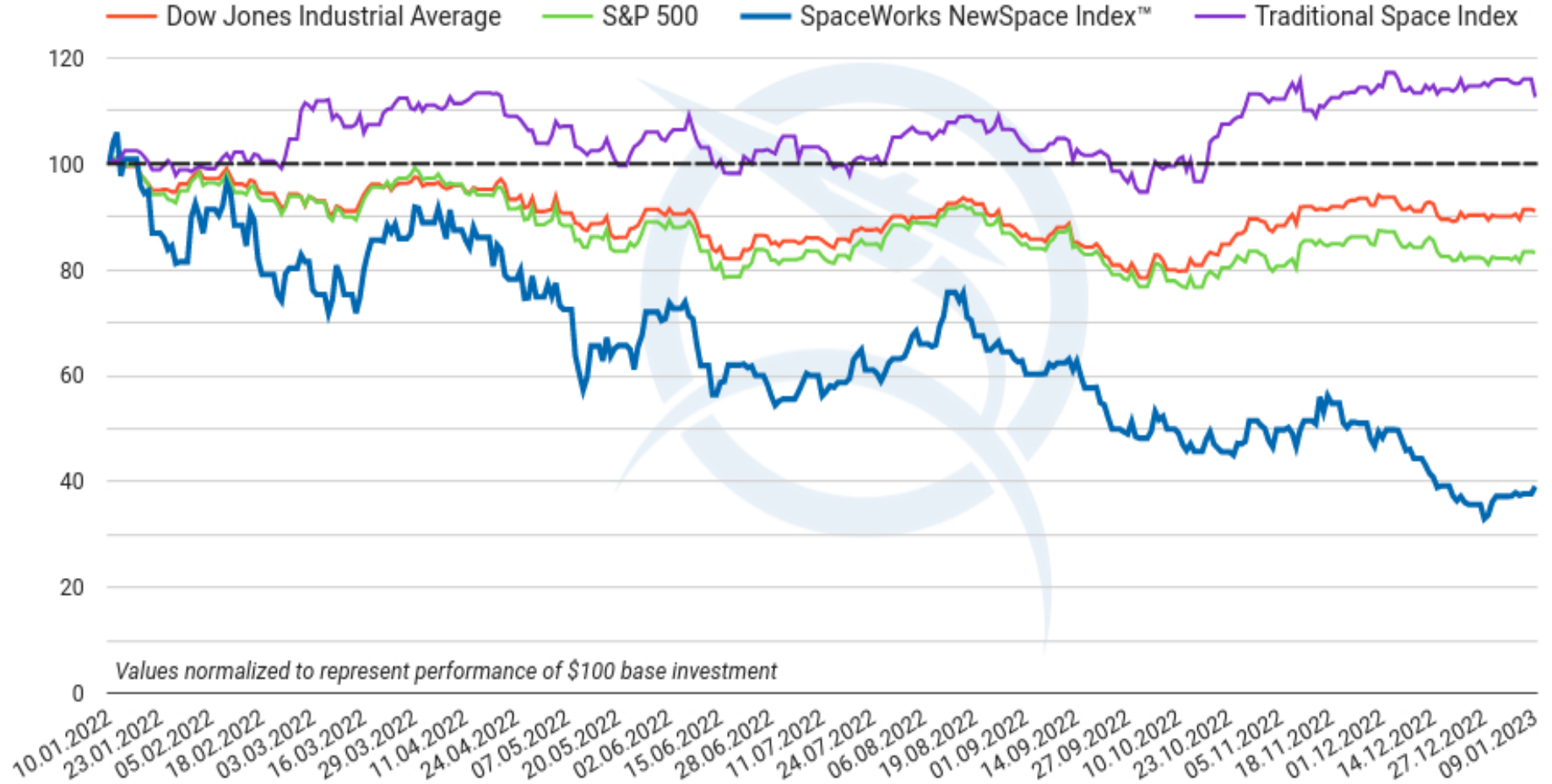


# FINANCIAL ISSUES OF COMMERCIAL MARKET IN 2022



## SETBACKS IN SPACE BUSINESS

- 2022 saw the collapse of many SPAC funded space companies
- Due to the uncertainty on the global markets and the failure of Space IPOs, young start-ups face a highly challenging funding environment
- Unfortunately this also affected some prospective customers of OHB (e.g. SpaceLink bankruptcy)
- Luckily OHB VC invested Ventures are healthy and have a good runway
- ConstellR has been able to raise funding (10M€ funding round) with prestigious investors despite of a challenging environment



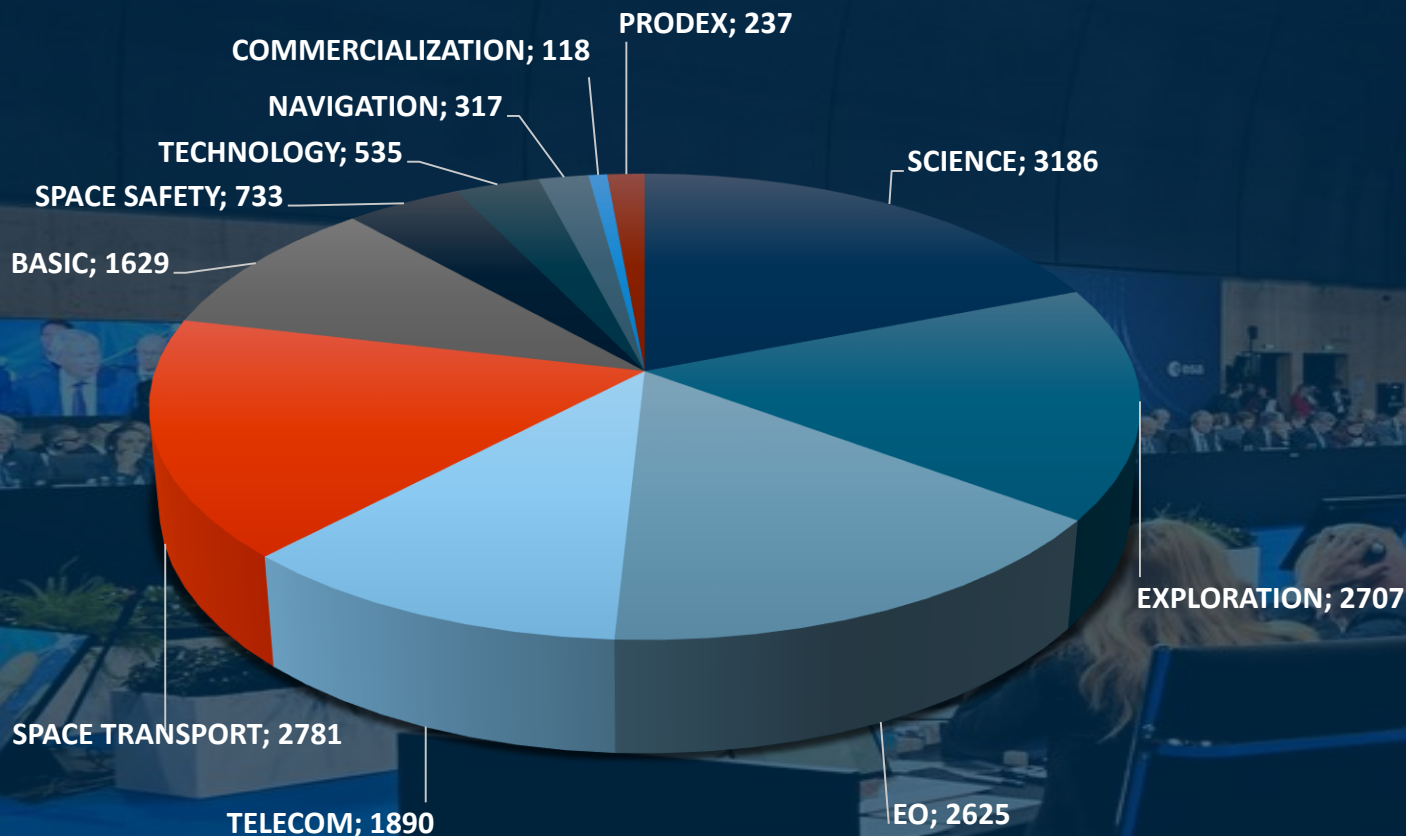
Source (retrieved at 10.01.2023): <https://www.spaceworks.aero/commercial/new-space-index/>

# ESA MINISTERIAL CONFERENCE

## RESULTS' OVERVIEW



### Total Subscriptions 2022 [M€]



16.9 bn€ committed for 2022-2025



17% budget increase compared to MC 2019



Extremely positive results given the current European multi-crisis scenario



Largest domains: Science, Exploration EO, Telecom → OH B is largely active in all of them



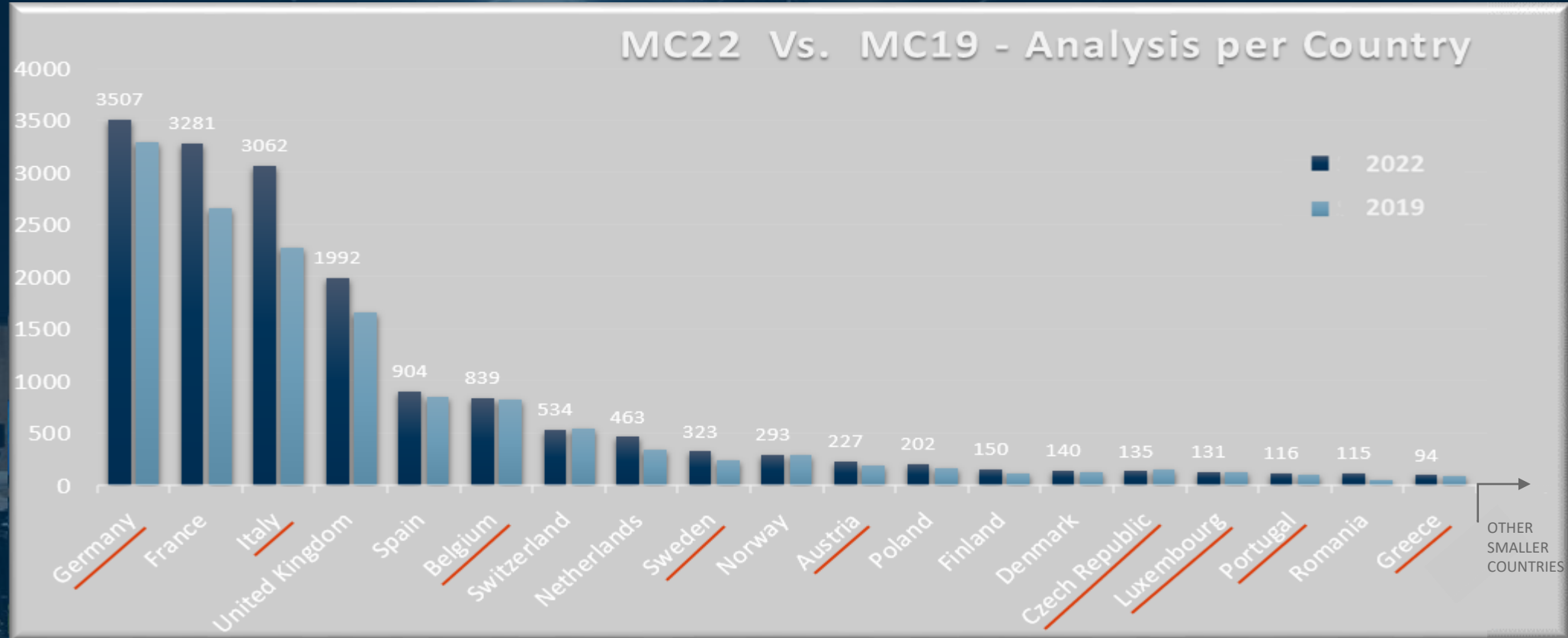
No domain was reduced  
→ positive for OH B



New entry: Commercialization  
→ new opportunities for OH B

# ESA MINISTERIAL CONFERENCE

SPACE-BASED CONTRIBUTION TO GLOBAL CHALLENGES



**DE - Largest contributor (21%)**



**IT - budget increase above average (35%)**



**Significant increase in OHB Countries**

# EARTH OBSERVATION



2022, A SUCCESSFUL YEAR WITH STRATEGIC PREPARATION FOR FUTURE EO



FORUM: payload contract awarded

IRIDE constellation: Contract award for OHB Italia  
12 satellites for climate change & critical infrastructures

2x sub-meter EO microsattellites with Satlantis  
(New Space)

2x Thermal Infrared payloads with ConstellIR  
(New Space)

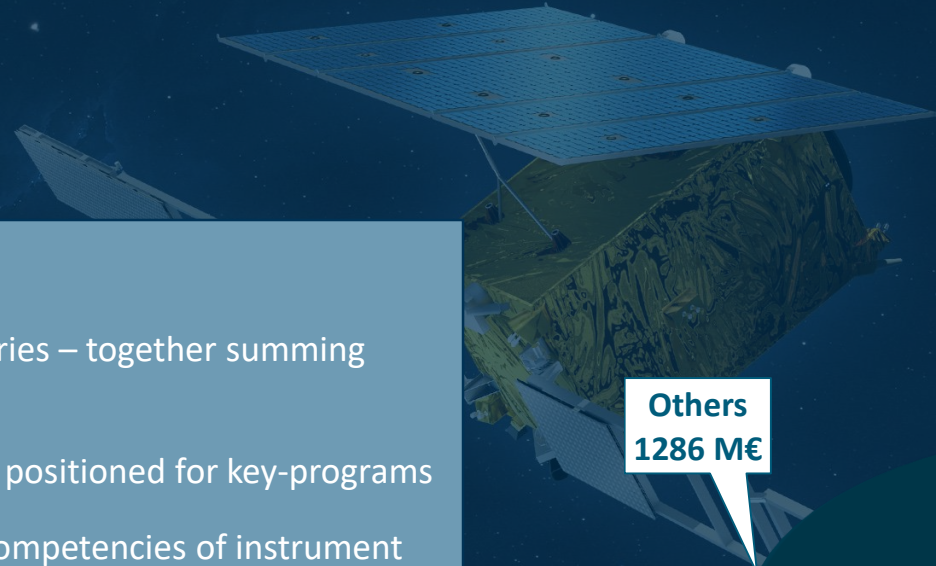
SAR Next Generation Phased Array payload

PPP-based VHR constellation study  
(New Space)

**Strong OHB positioning for future EO  
missions COPERNICUS and EARTH EXPLORER**

# EARTH OBSERVATION

ESA MINISTERIAL CONFERENCE & BEYOND



## Very positive outcome for OHB

- Excellent positioning of OHB countries – together summing >50% of whole budget
- ➔ OHB System and OHB Italia well positioned for key-programs
- Increased opportunity to expand competencies of instrument technologies

## Good ESA Opportunities for OHB

- EARTH EXPLORER 10/ HARMONY
- Copernicus Sentinel Missions 1 to 3
- Next Generation Gravity Mission
- AEOLUS 2

EO BUDGET (2,6 B€)

Others  
1286 M€

Germany  
661 M€

Italy  
485 M€

Other OHB  
Countries  
190 M€

# SATELLITE COMMUNICATION

ESA INCREASES THEIR ROLE IN SATELLITE COMMUNICATION



**High SatCom subscription: 2,5 B€**  
(including commitments from 2019)

**Germany contributes highest amount: 545 M€**

**OH B well prepared and positioned**

## 5G/6G Programme

Broadband from Space

Very high subscription 311 M€

Largest Contributor UK, Germany, Italy



## Optical Technology & Scylight

Fibre from the Sky

Well funded: 384 M€

Largest contributors Germany & Italy

➤ **HydRON**



## 4S Security Programme

Quantum Key Distribution

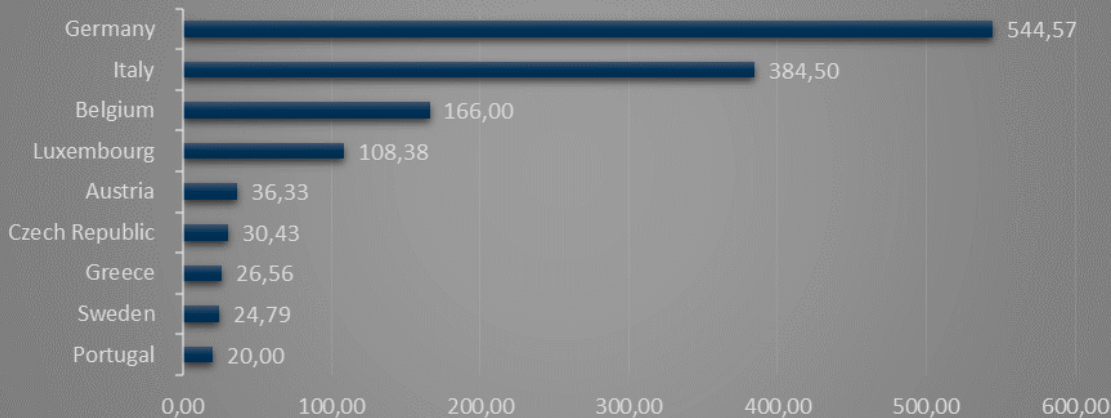
Very high subscription 452 M€

Largest Contributor Germany, Italy

➤ **Projects: SAGA, Eagle-1**



**OH B Group Memberstates**





# EUROPEAN SECURE CONNECTIVITY FROM SPACE

EUROPEAN INVESTS IN SECURE COMMUNICATION CONSTELLATION



- ESA Ministerial Conference 2022 for Secure Connectivity successful
- Germany is 2nd biggest contributor in ESA followed by Italy
- All OHB Countries and Companies involved in preparation



## European Commission

IRIS2  
Need for Hard- und  
SoftGov Security

2,4 B€



## ESA

Successful Programm at  
Ministerial Conference  
Technology

0,64 B€



## Private

Automotive, Internet  
Service Providers,  
Operators, Start-Ups,  
Venture Capital



## Large System Integrator

Satellites and Ground  
Segment, Launch  
Provider, Satellite  
Operator Service Provider



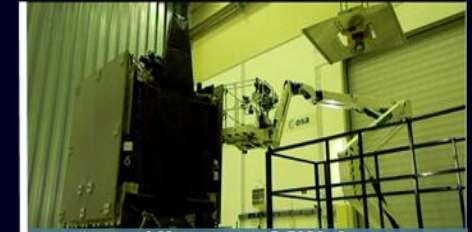
# GERMAN SECURE SATELLITE COMMUNICATION

SATCOMBW

Part of the actual  
German 100 B€  
Military Budget

# SATCOM<sup>Bw</sup>

OHB is successfully  
shortlisted for Primebid in  
2023



Hispasat 36W-1



Heinrich Hertz



EDRS -C



Electra

# NAVIGATION

OPPORTUNITIES FOR OHB TO RETURN IN A MAJOR ROLE ON THE NAVIGATION MARKET



## LEO-PNT

- Multilayer System of Systems approach with LEO satellites complementing MEO
- Oversubscription by Member States in the Program
- Germany allocated ~40 M€ or 26%
- **Opportunities for OHB for a strong contribution in the program**

Results are positive for OHB and give the possibility to return to major role in the European navigation market

**Opportunity of additional Next-Generation Navigation Demonstration Mission lead by Germany**

## GENESIS

- Global modelling of Earth
- Strong subscription from Italy (30 M€) and Belgium (21 M€), total >75%
- **Opportunities for strong OHB lead role in the program**

# EXPLORATION

EUROPE FOLLOWS THE WORLDWIDE GROWTH IN EXPLORATION



## Argonaut – Large Lunar Lander (EL3)

- Europe's mission to the Moon
- First phase of several lunar missions
- Germany assigned 110 M€, Italy 120 M€
- Excellent fit and opportunity for the OHB consortium
- Multi billion program expected over the next decades



## Esprit

- ESA's contribution to the NASA Lunar Gateway
- Important OHB technology development for in orbit refueling
- OHB is core team partner
- ESA Human beyond LEO program 393 M€ assigned



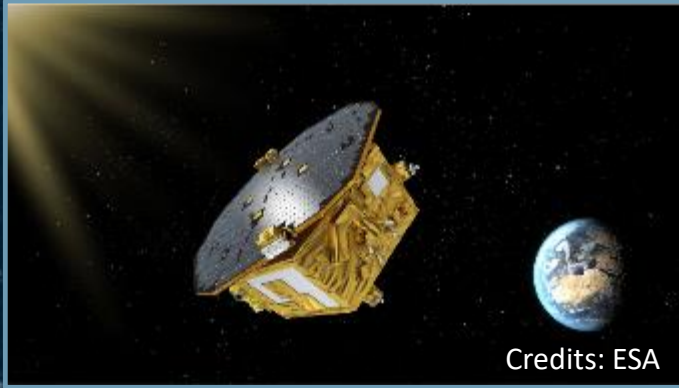
## Rosalind Franklin (Exo Mars Recovery)

- ESA's Mars rover mission 2028
- Secured contribution for OHB in consortium
- Additional procurement opportunities in Belgium, Italy and Sweden
- ESA Mars robotic exploration program: 729 M€ assigned

Exploration: the next big wave in the space business  
➔ more opportunities will follow

# SCIENCE

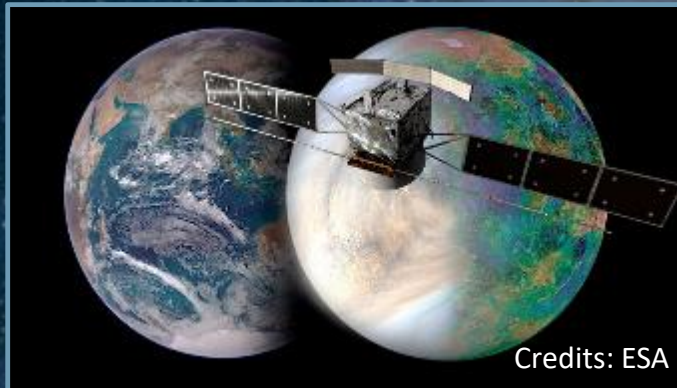
## OPPORTUNITIES FOR OHB IN ESA SCIENCE PROGRAMME



### LISA - Gravitational waves observatory in space

- Geo-Return conditions favor a German prime
- Opportunity for OHB key role
- Opportunity for large-class science mission after OHB's success story in PLATO (medium-class)

Opportunity for OHB to evolve as system prime in a large flagship science mission (L-Class)

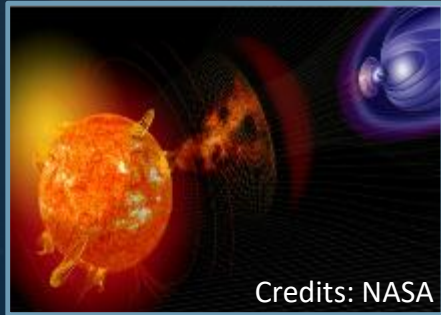


### EnVision - Venus mission

- Next Medium-class mission
- OHB core team partner
- Decision expected in 2024

# SPACE SAFETY AND SECURITY

OHB OPPORTUNITIES IN A GROWING MARKET



Credits: NASA

## VIGIL

- German subscription: 30 M€ for the Magnetograph
- Key role for OHB envisaged
- Good opportunity to secure 20 M€+ share

## OHB focus on services:

- In orbit servicing
- Space weather
- Ground-based asteroid detection



Credits: ESA / CLEARSPACE

## ADRIOS – Clearspace 1 (LEO Service)

- Debris removal
- Good support at MC22 to secure 11M€+ for OHB Sweden



## ENCORE – Clearspace GEO Service

- Life-Extension of GEO Satellite
- Luxembourg secured 26M€, Germany 14M€
- Recurring sale opportunity



## HERA

- 70 M€ contributed by Germany to secure launch in 2024



## Fly Eye 2<sup>nd</sup> Gen Telescope

- 2<sup>nd</sup> telescope for ESA
- 4 additional telescopes for Italy
- OHB Italia System prime

# SMALL SATELLITES

OHB GROUP WELL ESTABLISHED IN THE SMALL SAT MARKET



- OH B Group signed in 2022 several institutional and commercial contracts based on OH B small satellite solutions
- OH B Italia contracted for Italian IRIDE satellite constellation  
→ 12 satellites
- OH B Sweden won several contracts for institutional weather and hyperspectral as well as commercial high-resolution earth observation small satellites  
→ Innosat becoming a standard product
- Luxspace contract for maiden mission as well as a small satellite for University of Armed Forces in Germany  
→ Triton-X market entry



**OH B Group meets the growing demand of the worldwide small satellite market with strong products**

# SECURITY FROM SPACE

„ZEITENWENDE“ – SPACE-BASED RESPONSES TO NEW CHALLENGES



## Odin's Eye

- Future European Space-Based Missile Early Warning and Tracking System
- OHB leads European Study with partners from 12 Member States
- OHB is prime in Phase 2 (~ 90 M€) bid

OHB reliable prime and consortia partner for responses to new security challenges



## Responsive Space

- “Operationally Responsive Space is defined as the affordable capability to promptly, accurately and decisively position and operate national and military assets in and through space and nears pace” – US LtGen Frank Klotz, 2006
- OHB is partner in a bid for a European Study (~ 20 M€)
- OHB well positioned for the future with its space, ground and launch assets



# SPACE TRANSPORTATION

OHB - RELIABLE PARTNER IN ARIANE PROGRAM & PIONEER IN SPACE TRANSPORTATION MARKETS



## In-Space Transportation

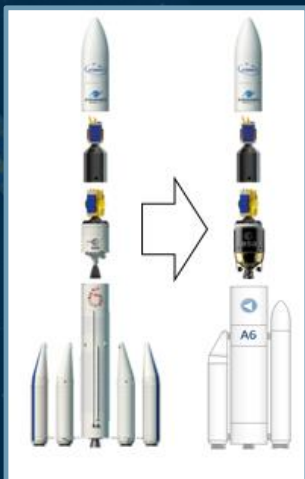
- OHB successful in winning several studies
- Good German subscription in ESA programme
- Good opportunity to prime a demonstrator mission for rendezvous & docking
- First step for OHB to enter a new growing market

OHB remains a reliable partner in the European Launcher Programme and enters new markets



## Commercial Space Transportation

- ESA supports microlauncher development
- European gap in access to space → high demand for EU commercial launch services - Rocket Factory



## Ariane 6

- Stable ESA budget - development and exploitation of Ariane-6 ensured
- MT Aerospace strong partner in consortia
- ESA Future Launchers Preparatory Programme with opportunities for OHB and MT

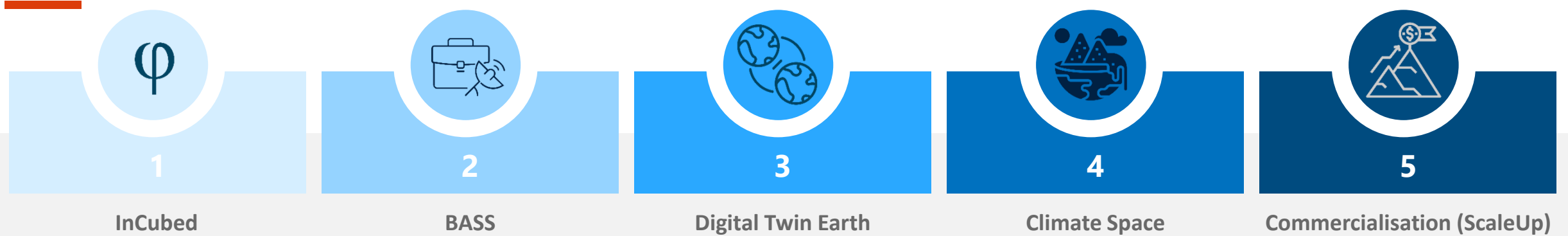


## CSG – Kourou Spaceport

- Opportunities for MT Aerospace and OHB Digital to participate in spaceport improvements and activities

# DOWNSTREAM ACTIVITIES

INCREASED INTEREST OF ESA



- Dedicated mainly to commercial (upstream and) downstream EO activities

- Dedicated to downstream applications in any domains (Telecom, EO, SatNav, Human Spaceflight Tech)

- Dedicated to the development of a digital replica of the Earth

- Dedicated to support climate action on a national (emission reporting and mitigation), regional (European Green Deal) and global scale (UNFCC Paris Agreement)

- Cross-directorate programme dedicated to help deliver the new commercialisation opportunities in European space.

## ESA increased investments in Downstream

- Several programs in different ESA Domains
- Total ESA budget of 448 M€
- Opportunities for OH B Digital in several ESA Programs

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

### Utilizing SPACE DATA

We transform the market needs of today into sustainable business for tomorrow

- Solutions for the entire workflow
- We generate value from data

### Utilizing SPACE TECHNOLOGY

We leverage our developments and competencies in space and non-space industries to enable

- robust and secure connectivity and
- reliable digitalization of business processes



### Antennas and Telescopes

- OHB Digital offers wide range of mobil units to permanently installed large-scale facilities
- Additional contracts for telescopes signed, reinforced the leadership position of OHB Digital Connect is this area
- Development of additional digital products should further sustain the growth



### Lunar Communication and Beyond

- 2023 – Finalisation of the development of a 20 meter ground station for lunar communication - enlarge the existing SatCom antenna product line.
- This ground station is the core of a development towards a scalable communication capability for lunar missions
- Worldwide Opportunities and bids for the Lunar Communication Product Line



### X-Ray Application

- Construction of new X-Ray Gantry started in 2022
- This innovative X-Ray Facilities and Applications opens new Market Segments with new customers for OHB Digital

OHB well positioned with Products and Services for an increasing communication solutions demand

A short, solid orange horizontal line centered above the main text.

# WELL FILLED ORDER PIPELINE

# OHB GROUP ORDER INTAKE PIPELINE 2023

OUTLOOK 2023 , TOP 7 ACQUISITIONS



> **1,4 bn Euro**

expected order intake in 2023

Book-to-bill ratio > 1


Top 7  
acquisitions



**Odin's Eye**  
Missile Early Warning



**SAGA**  
Quantum Key Distribution



**SatComBW**  
Bundeswehr SatCom



**Security Constellation**  
Connectivity Network



**Genesis**  
Precise Earth Measurement



**ARIANE 6**  
Launcher Subsystems



**VIGIL PMI**  
Monitoring Sun

# CONCLUSIONS



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

---

# THANK YOU!

**OHV SE**

Manfred-Fuchs-Platz 2-4  
28359 Bremen  
Germany

**Phone:** +49 421 2020 8  
**Fax:** +49 421 2020 700  
**Email:** [info@ohv.de](mailto:info@ohv.de)  
**Web:** [www.ohv.de](http://www.ohv.de)