

The background of the slide is an aerial photograph of a mountain range, likely the Alps, with snow-capped peaks and a clear blue sky. A small orange horizontal line is positioned above the title.

# THE OPEN SOURCE APPROACH TO ON-BOARD DATA PROCESSING

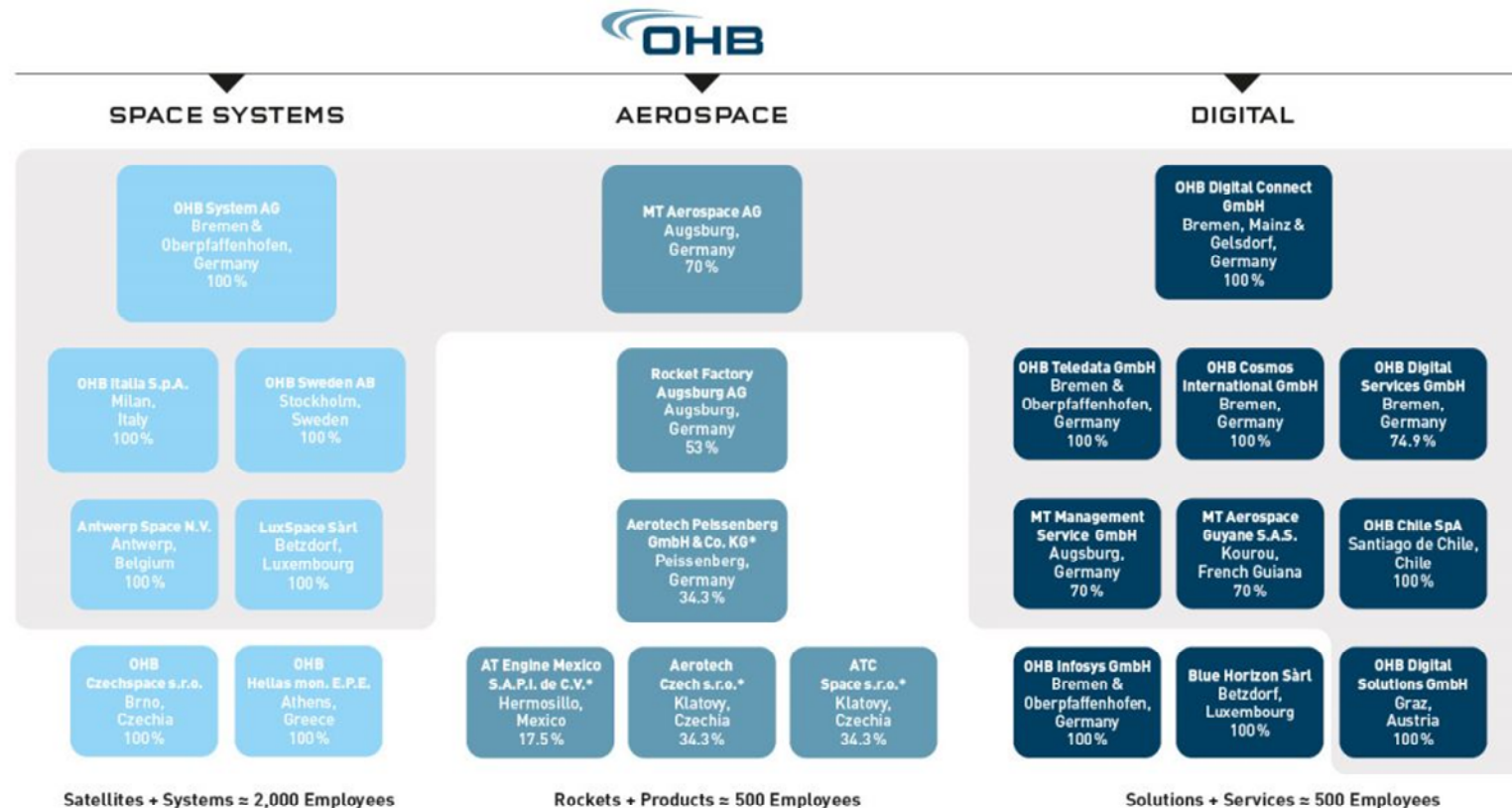
VIEWED FROM THE PERSPECTIVE OF OHB-HELLAS

SIMON VELLAS, 10.12.2021

# OHB. VISIONARY. EUROPEAN.



- OHB SE is Germany's first listed technology & space corporation
- Independent entity in the European aerospace sector, contributing to all major space programmes



This chart shows an overview of the business segments, not the detailed shareholding relationships.

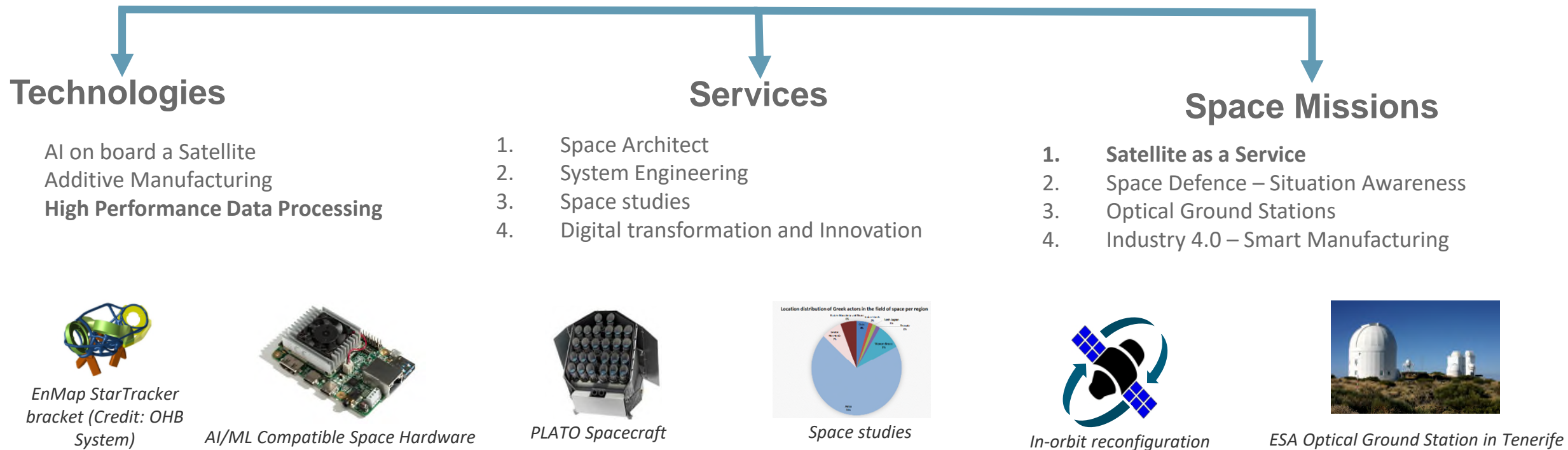
\*The approx. 650 employees of the ATP Group are not included here. Aerotech Peissenberg GmbH & Co. KG is included at equity in the consolidated financial statements of OHB SE.

Consolidated

# OHB HELLAS: 1<sup>ST</sup> DEDICATED SPACE SYSTEMS COMPANY IN GREECE



- Founded in July 2018 in Marousi, Athens, Greece, as a 100% subsidiary of OHB SE
- Establishment follows the signed MoU in December 2017 with the General Secretariat of Telecommunications & Post



# OPEN SOURCE IN SPACE

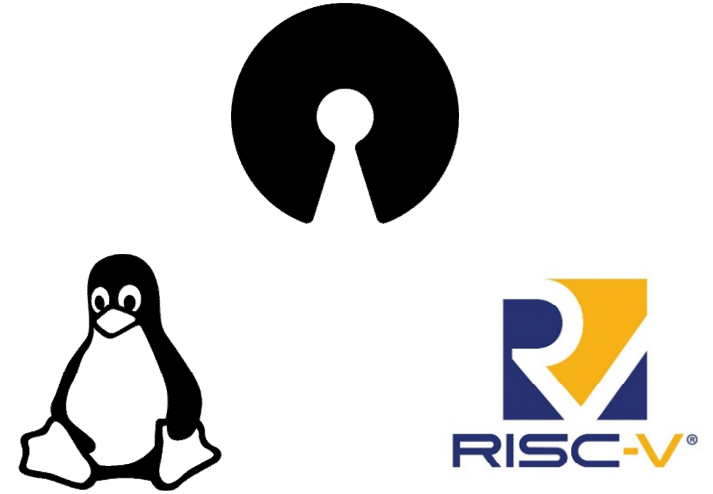
OHB PERSPECTIVE



## Growing need for open source

- New-Space approach requires moving away from traditional approaches
- Technology independence. Open Source enabling innovative developments
- Community-based developments, sharing knowledge and resources

What is the role of the big industrial groups like OHB?



## Open Source approach in on-board data processing

- Hypervisors already used in space allowing for SW flexibility (Open-source implementations being explored)
- Linux increasingly used in missions (ISS modules, High-Performance Payload Processing).
- RISC-V (open-source ISAs) (Major new developments for space, e.g. Cobham-Gaisler, Microsemi)

# NEXT GENERATION DATA HANDLING SYSTEMS

## TECHNOLOGY TRENDS AND NEEDS

### Need for increased flexibility

- Modular HW based on building blocks
- Mixed Criticality
- Open Architectures
- Easier to program, test and maintain
- Reusable SW frameworks, TSP

### Need for increased performance on-board

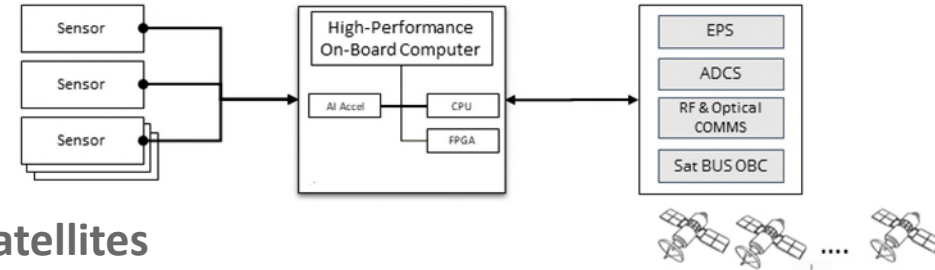
- Increased adoption of AI processing on-board
- Enormous data generation by modern satellites
- Shift towards IoT and cloud-based processing
- App-store concept



# SATELLITE AS A SERVICE

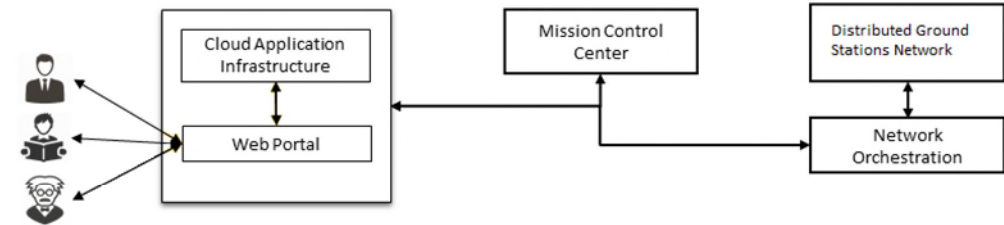
- **Flexible on-board processing, an enabler for Satellite-as-a-Service (SaaS)**

- Reconfigurable on-board HW/SW, cloud services



- **SaaS, a service of renting out satellite time, offering easy access to smart satellites**

- Community-based platform
- Any kind of satellite can be listed
- Cultivating sharing economy and maximizing resources in orbit



- **OHb-Hellas is committed to develop this technology in Greece**

- A new service targeting commercial and institutional markets
- Relying on developments and existing open-source activities in Greece

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THANK YOU!