

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

# LEVERAGING DIGITAL SOLUTIONS FOR A SECURE AND CONNECTED WORLD

DR ARNE GAUSEPOHL, MANAGING DIRECTOR OH B DIGITAL SERVICES GMBH

# PURPOSE

OHB DIGITAL'S CONTRIBUTIONS TO THE GROUP PURPOSE

**“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

*Focus of this presentation*



The first  
“Digital” Twin

*Apollo Simulators at Mission Control in Houston/NASA*

# SPACE IS A POWERFUL TECHNOLOGY INNOVATION ACCELERATOR

APPLICATIONS IN THE SPACE SECTOR HAVE ACCELERATED THE ADVANCEMENT OF TECHNOLOGIES AND THEIR DIFFUSION IN MANY WAYS



**SOLAR POWER**



**DIGITAL TWINS**



**PORTABLE COMPUTERS**



**WATER FILTRATION**



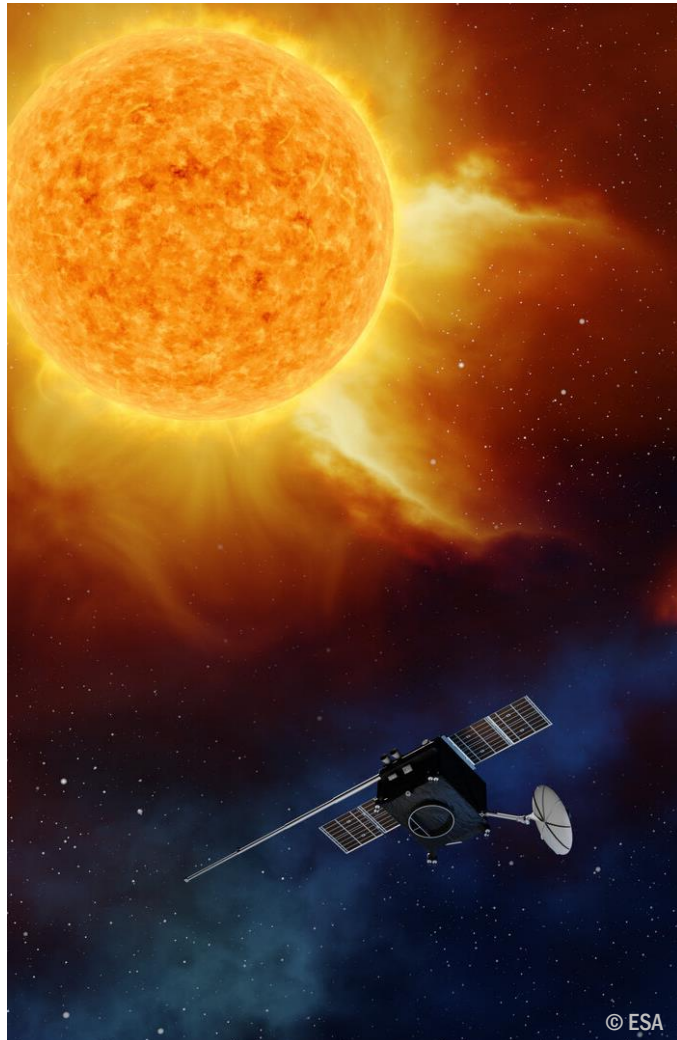
**IMAGE SENSORS**



**SAFETY PROCEDURES**

# THE POTENTIAL OF SPACE TECHNOLOGY FOR ORGANIZATIONS

THE TRANSFER OF SPACE TECHNOLOGY & KNOW-HOW BRINGS COMMERCIAL BENEFITS TO THE NON-SPACE INDUSTRY



Developments in space projects face **extreme conditions and a high need for perfection:**

- Extreme environments
- Zero failure
- High security requirements
- High system complexity
- Protection of human life



**Space industry works at the edge of innovation. Solutions show characteristics that are of high relevance for many industries:**

- Reliability
- Robustness
- High-tech
- Security
- Innovation

# OHB DIGITAL COMPETENCE LANDSCAPE

OUR HERITAGE FROM SUCCESSFUL SPACE PROJECTS HAS LED TO A BROAD PORTFOLIO OF COMPETENCIES



## SOFTWARE & APPLICATIONS

- Agile software development
- Individual **Cloud Solutions**
- Professional Services
- Archive and processing systems for **Big Data** analyses



## DATA & ANALYTICS

- Development of services based on **satellite data** and modern **AI/ML technology**
- Own real-time capable system for airborne earth **observation & monitoring**



## IT SECURITY

- Planning and implementation of **security concepts** for IT infrastructures and networks incl. hardware and software
- **Cyber security** strategies and risk assessments



## INFRASTRUCTURE

- **Ground segments:** end-to-end satellite command and control solutions
- Innovative **smart mechatronics**
- Automated monitoring and control of **energy distribution**



## OPERATIONS

- Autonomous **operation** of space systems for complex satellite missions
- Own **multi-mission center** for missions with globally distributed receiving and transmitting stations



## COMMUNICATION

- **Satellite communication**
- Highly secure **encryption** and transmission of data
- Signal Simulation
- Quantum communication

# WHERE WE FOCUS ON

INDUSTRIES THAT BELONG TO THE CRITICAL INFRASTRUCTURE PROVE TO BE VERY ATTRACTIVE FOR OUR OFFERINGS AND SOLUTIONS

## Competencies with the biggest potential for technology transfer



### Current Industries

*Where we already generate revenue today*



### Further Growth Targets

*Technologies & competencies from space projects are very relevant for all companies with critical infrastructure*



# HOW TO LEVERAGE DIGITAL SOLUTIONS FROM SPACE

WE TARGET TWO ADDITIONAL REVENUE STREAMS OUTSIDE THE TRADITIONAL SPACE PROJECTS FROM OHB

**EXISTING**  
products &  
competencies

**1**

Leveraging existing  
products & competencies



**NEW**  
industries

**NEW**  
products &  
competencies

**2**

Leveraging existing  
customer access



**EXISTING**  
customers





# GO-TO-MARKET

WE BUILD ON THREE DIFFERENT APPROACHES TO MAKE OUR TECHNOLOGIES ACCESSIBLE FOR NON-SPACE INDUSTRIES

1

## Integrate & Build own End-Customer Solutions

- Secure a high share of the value chain
- Enables access into attractive service & support business

2

## Licensing & Partnerships

- Easier access to new markets with no existing footprint
- Less invest & less risk enable fast trials

3

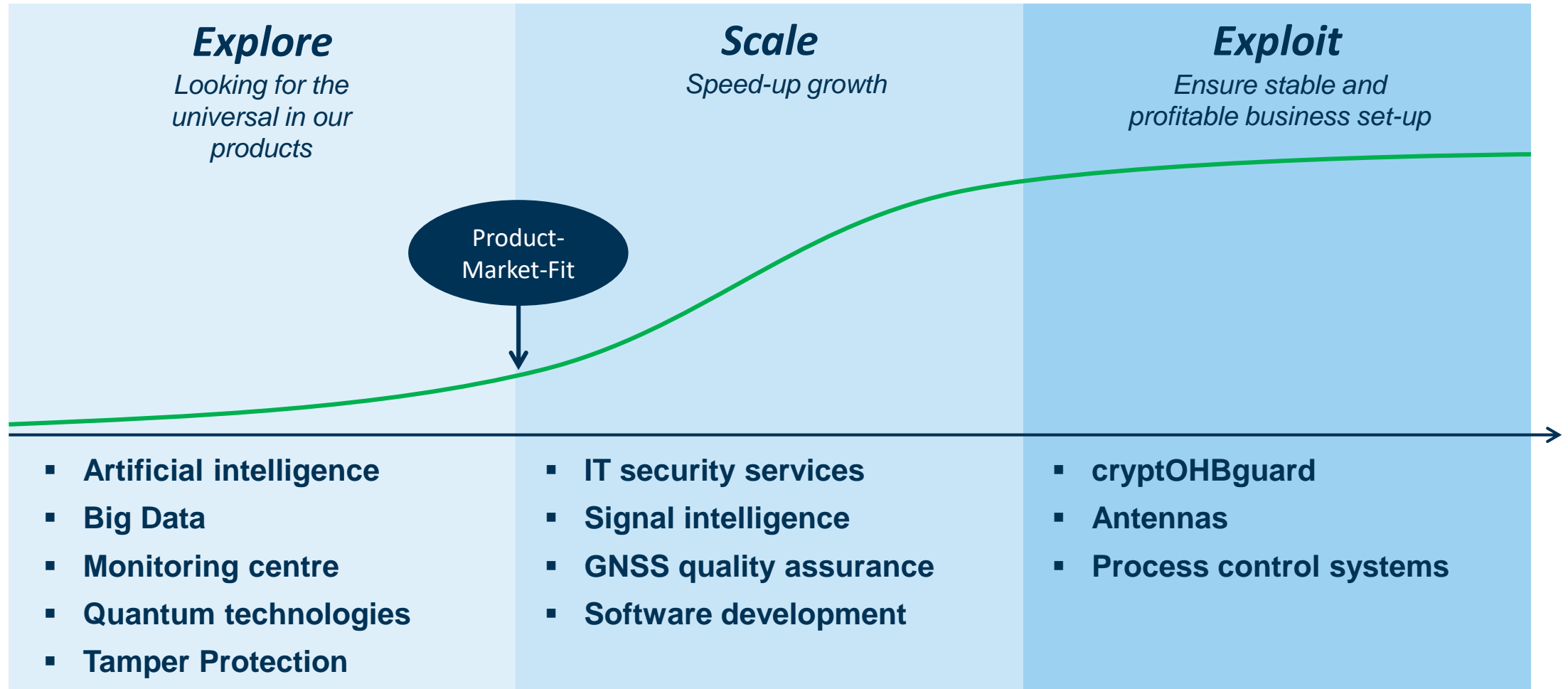
## Spin-offs & Ventures

- Accelerate go-to-market with dedicated entities
- Attract great teams and leverage with external invest



# WHERE WE ARE TODAY

OUR PROCESS ENSURES A CONTINUOUS EVALUATION OF OUR TECHNOLOGIES AND THEIR SUITABILITY FOR NON-SPACE INDUSTRIES



*Current focus topics in tech. transfer process*

# PRODUCT EXAMPLE 1

## CAPACITY MANAGEMENT

### IDEA

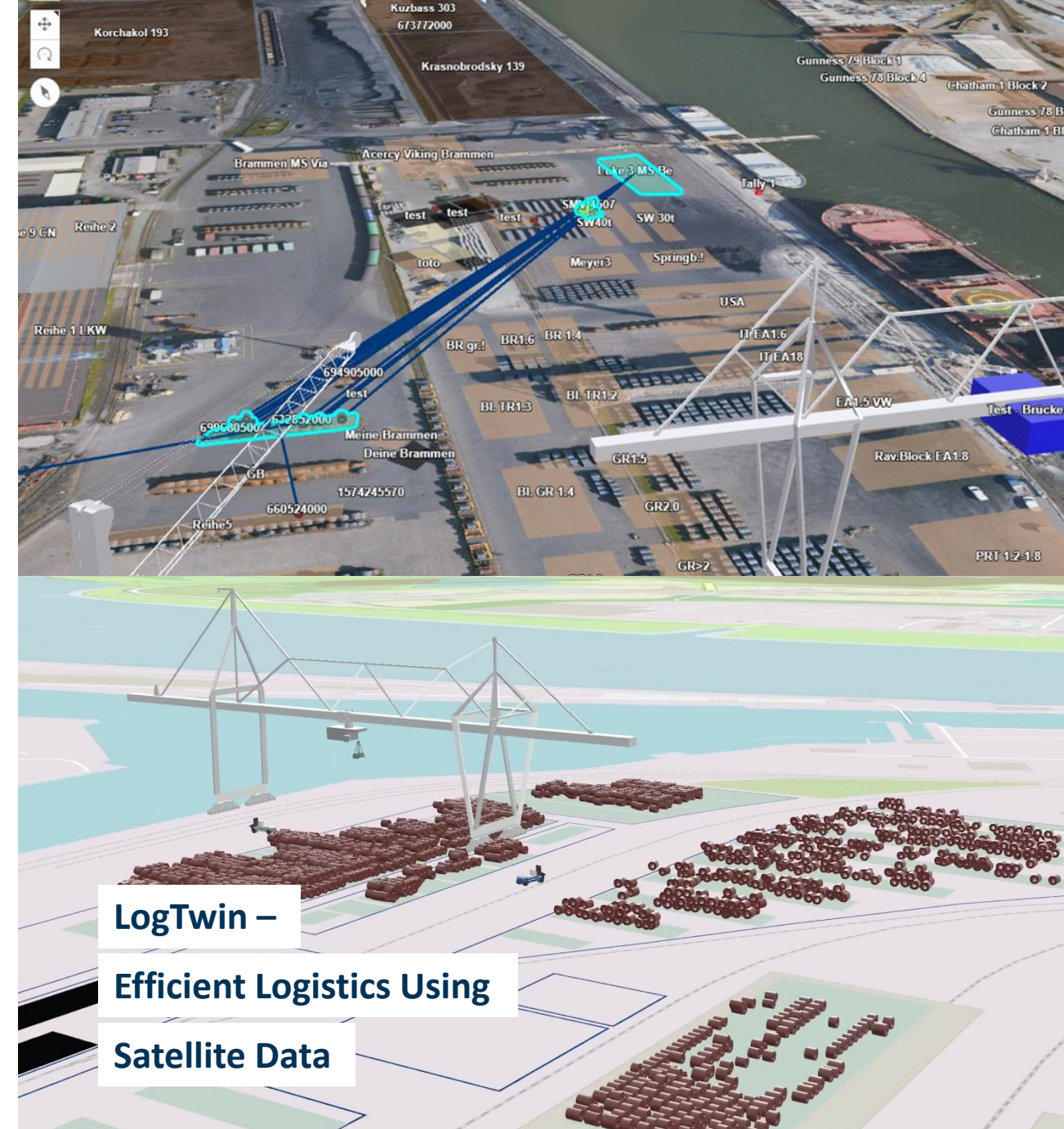
- All intralogistics processes in the harbour can be mapped in 3D
- Provide full process transparency: Plan/automate/optimize workflows

### TECHNOLOGY

- Combining GNSS data, AI, and sensors
- Cloud-based software architecture
- Indirect 3D location tracking using the digital fingerprint

### CUSTOMER BENEFIT

- Improving resource efficiency ~25%
- Reducing loading errors to zero
- Reducing CO2 footprint



## PRODUCT EXAMPLE 2

### IT SECURITY SYSTEMS AT DEUTSCHE BAHN

#### IDEA

- Using existing security know-how from space projects to build robust IT security systems for critical infrastructures in harsh environmental conditions

#### TECHNOLOGY

- cryptOHGuard: decentralized IT security system including hardware and software for firewall and encryption use cases
- Installation directly at signal boxes

#### POTENTIAL

- Relevant for all IP communication processes in harsh environments
- >300.000 encryption elements must be installed until 2030 at DB Netz

**cryptOHGuard –**

**Our End-to-End Security Product**

**for Critical Infrastructures**

# PRODUCT EXAMPLE 3

## GREEN EARTH

### IDEA

- Problem: Global sink capacity reduces each year due to desertification, forest fires etc.
- Find ways to reduce desertification and create arable land
- Build CO2 sinks globally

### TECHNOLOGY

- Creation of biological soil crusts (BSC) through spraying biomatrix on deserted land
- Unique mix of 28+ different algae and bacteria
- Comprehensive end-to-end system from identification of areas, production & treatment to the monitoring

### POTENTIAL

- CO2 Markets will drastically increase (both voluntary + compliance market)
- New EU regulation of CO2 trading expected

**Sustainable**

**Green-Engineering to Create**

**CO2 Sinks Globally**

