



UNLOCKING THE POWER OF SATELLITE DATA FOR A BETTER EARTH

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PURPOSE

OHB DIGITAL 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

Focus of this presentation

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

FROM SPACE TO EARTH: DOWNSTREAM SERVICES FOR BETTER DECISIONS

OHB IS ONE OF THE GEOSPATIAL EXPERTS FOR DOWNSTREAM SERVICES



Earth Observation Data

- Data preparation
- Spatial data analytics (Statistics, Rules, AI)
- Fusion with other spatial data
- **Integration into business processes**

Up-to-date and precise spatial information for decision-makers and those responsible for planning

DOWNSTREAM SERVICES

THE POTENTIAL IN EUROPE

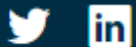
CM2022

ESA sets out bold ambitions for space

ESA has put forward its ambitious plans for the next three years and beyond to increase European autonomy, leadership and responsibility in space.



Josef Aschbacher
ESA Director General



Source: <https://vision.esa.int/>

Europe and Space

JOBES

230 000

UPSTREAM REVENUES (35% OF GLOBAL MARKET)

€9 Billion

DOWNSTREAM REVENUES (25% OF GLOBAL MARKET)

€70 Billion

22 ESA Member States

27 EU Member States

16% of global space public funding

REMOTE SENSING IN THE PAST AND IN THE FUTURE

LETS GROW THE VARIETY OF PRODUCTS

- Remote Sensing with standard sensors for standard results



Past Applications – Basic

- Current and future satellites with sophisticated sensors for multiple applications in a broad variety of markets



Future Applications – Broad and Refined

REMOTE SENSING IN THE PAST AND IN THE FUTURE

LETS GROW THE VARIETY OF PRODUCTS

- Remote Sensing with standard sensors for standard results
- Standard tools and basic technology



Past Applications – Basic with standard tools

- Current and future satellites with sophisticated sensors for multiple applications in a broad variety of markets
- Innovative technologies and outstanding expertise



Future Applications – Broad and Refined, made with Expertise and Passion

NO ECONOMIC DECISION WITHOUT GEO-INFORMATION

- At least **80%** of all decisions in municipalities are related to geoinformation
 - **80%** of all private company data have a spatial reference
 - **90%** of all economic decisions are based on geoinformation
- Remote sensing data are the best geoinformation: **objective, up-to-date, neutral**

Source: www.geo.admin.ch - Broschuere_Geoinformation_fuer_alle_2020_www.pdf



EARTH OBSERVATION DATA IS CRITICAL

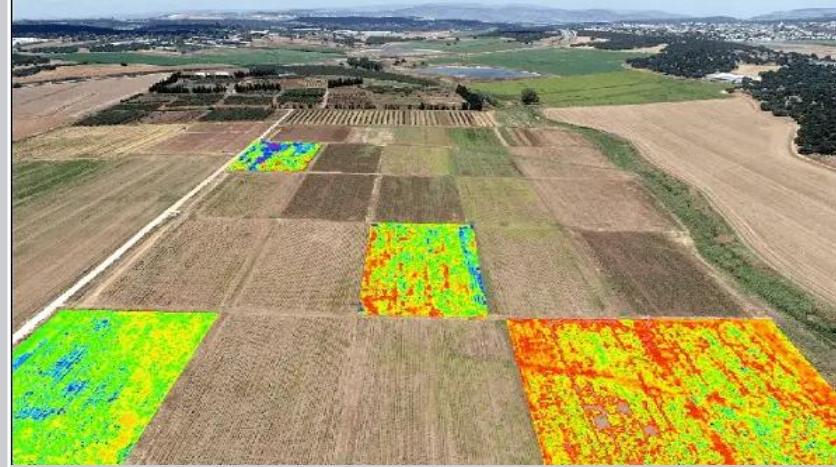
FOR ENVIRONMENTAL PHENOMENA AND THE ANTHROPOGENIC IMPACT

Renewable Energy



Location of solar-, wind-, hydro-power infrastructure

Global Agriculture Management



Crop growth model simulations and crop yield forecasts

Maritime surveillance



Vessel detection and tracking e.g., for oil pollution

Climate change and CO² emissions



Protect cities and environment for future generations

Smart City:
Digital Twin &
dynamic Airflow



SMART FARMING

YIELD POTENTIAL WITH COPERNICUS SENTINEL-2 SATELLITE DATA

- Downstream Service:
Fully automated sensor-to-result process chain
- Solution for one of the world's largest seed producer
- Satellite data for calculation of yield potential
- Cloud based solution (AWS)
- Terabytes of satellite data for time series





REFORESTATION

SATELLITE DATA FOR MONITORING TREE GROWTH

- Monitoring reforestation areas
- Use of multi-spectrum remote sensing technology
- Automated process chain to calculate tree heights, tree growth and vegetation vitality
- Answering the donator's question: "Where and how does the tree grow that was planted with my donation?"
- Solution for a NGO, acting on modern environmental campaigns

green steps



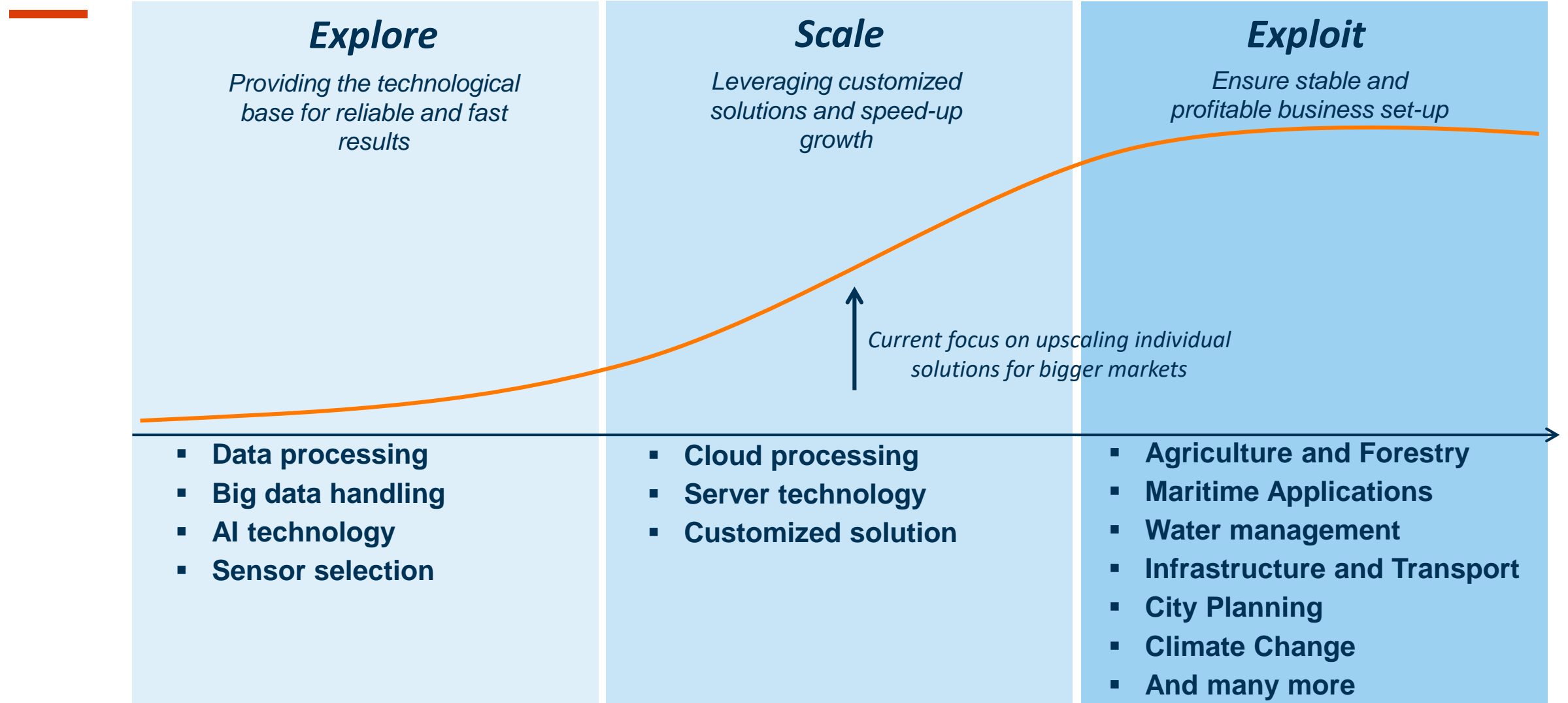
DEFENCE

INFORMATION FOR DECISIONS

- Changes are meaningful information and crucial for the right decisions.
- For defence application, detecting changes in large datasets are a major task for image analysts.
- Based on radar data, areas of change are automatically indicated, and the “position of change” is available to image analysts and field experts.
- Geolocation of indicated change for any geo-related software or device.
- Challenge: Huge amount of data, high frequency, automatically processing with high-end technology (e.g. Artificial Intelligence)

WHERE WE ARE TODAY

BASED ON FIRM GROUND WE ARE READY TO EXPLOIT THE MARKET FULLY





DIGITAL TWINS FOR A BETTER WORLD

REMOTE SENSING SERVE THE REAL DIGITAL TWINS OF GEO-ENVIRONMENT – CITIES – HABOURS - FORESTS – COUNTRIES - EARTH