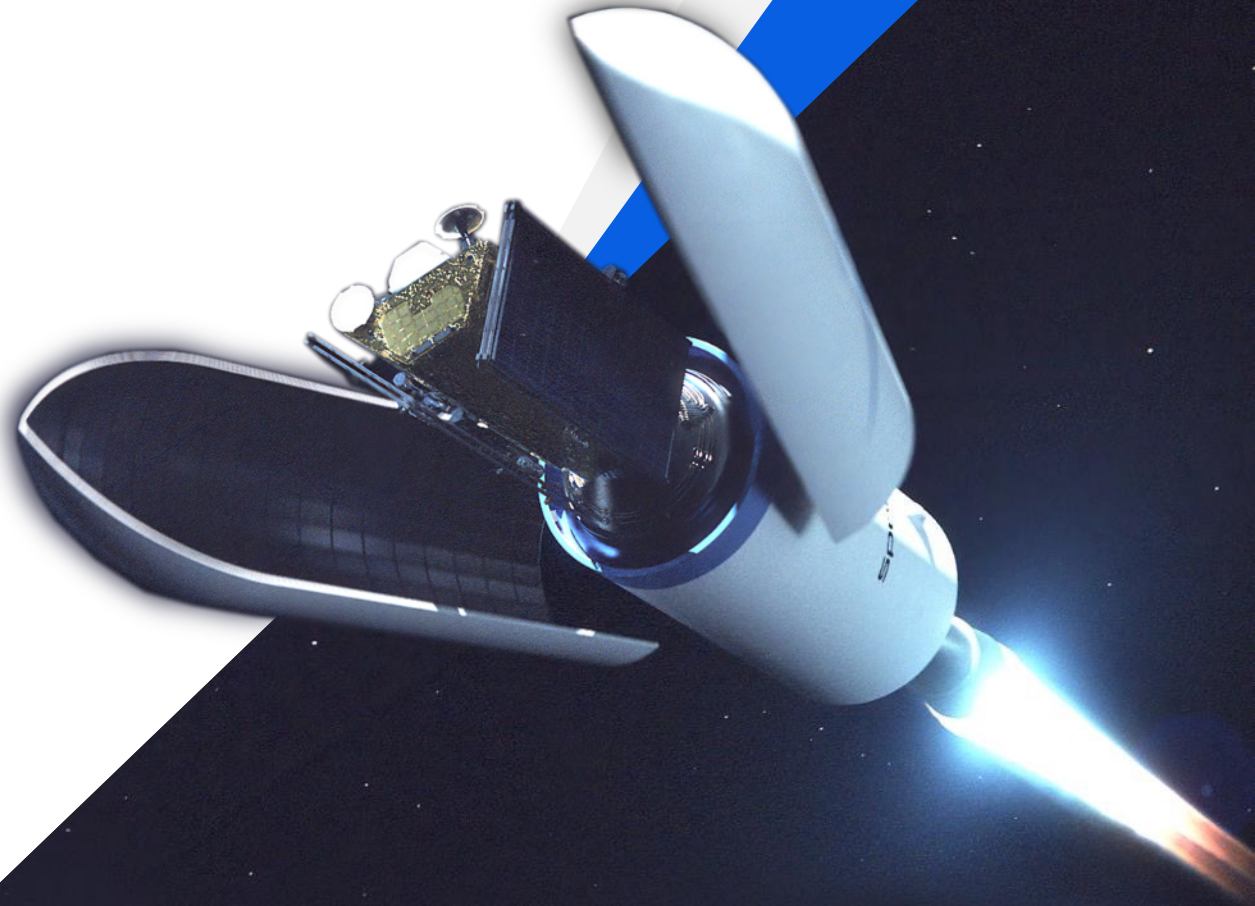


isar aerospace 

ENGINEERING **the future of** **SPACE FLIGHT**

1 December 2021





Josef Fleischmann

COO

*Background in mechanical engineering
Launched first-ever hybrid rocket from South American soil
Won first-ever SpaceX Hyperloop competition
Led pyrotechnical separation mechanisms at Panasonic*

Engineer at Panasonic

Worked at pyrotechnical separation mechanism

Winner of SpaceX Hyperloop Competition

Founded and developed a web app with over 500k users in 6 months

University of Tennessee Space Institute

Researched on Fluid mechanics and Laser Spectroscopy

Technical University Munich, Germany

MSc Mechanical Engineering

Technical University Munich, Germany

BSc Mechanical Engineering

SHAPING THE WORLD

COMMERCIAL SPACE ECONOMY IS MOST CRITICAL INFRASTRUCTURE GLOBALLY



Connect the Unconnected

3.9 billion people without internet access. Improving social injustices and bringing wealth to emerging economies with internet from space



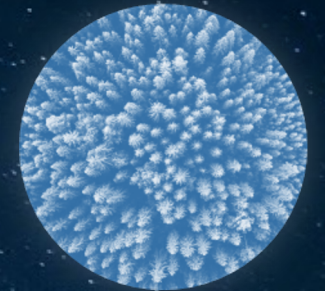
Improved Decision Making

\$1.4 trillion in economic benefits through satellite-based navigation system GPS with >\$1billion/day lost in case of GPS outage



Climate Crisis Response

Over 50% of climate change parameters are provided by satellites, enabling decision processes and crucial insights into our planet

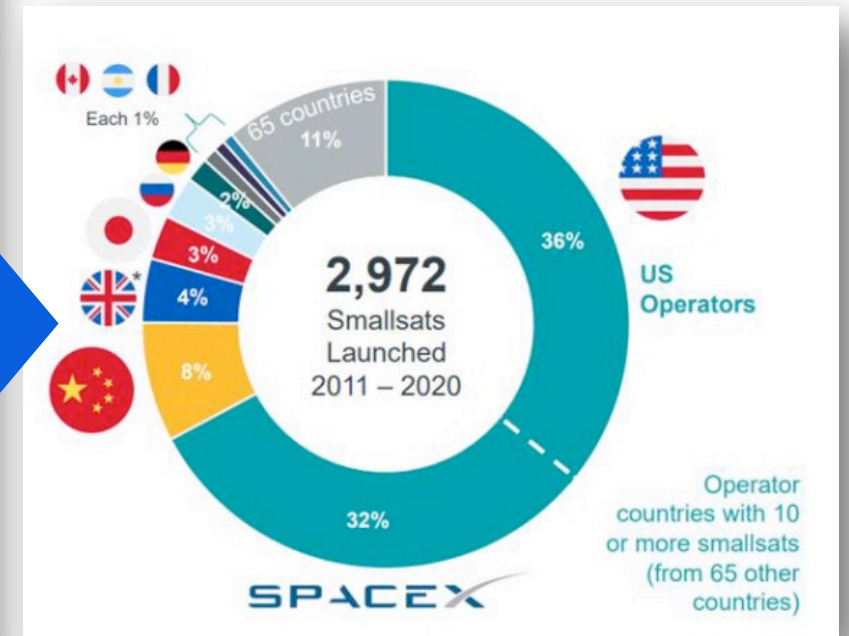
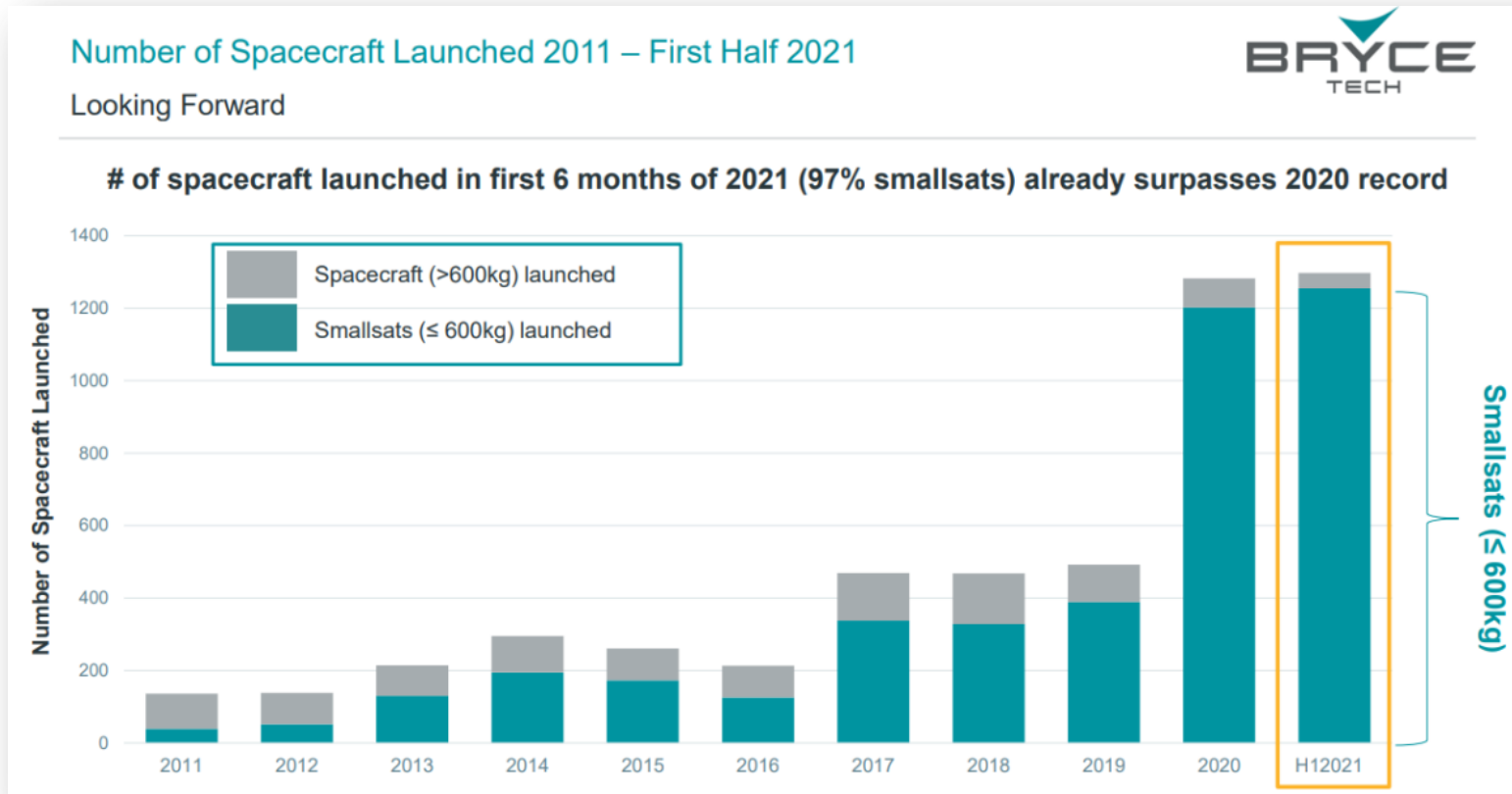


Sustainable & affordable

Isar Aerospace provides space access through clean burning propulsion systems, high production automation and engineering pragmatism

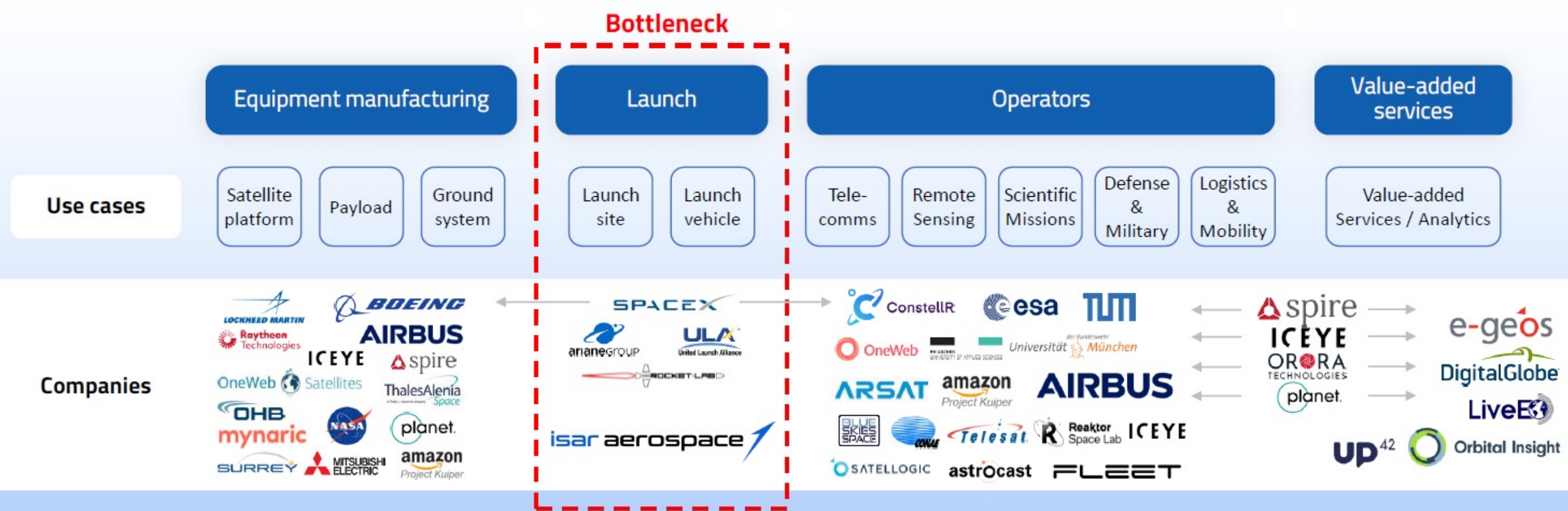
THE MARKET

CONTINUOUSLY RISING DEMAND FOR LAUNCH CAPACITY



UNDERSTANDING THE INDUSTRY

COMMERCIAL VALUE CHAIN AND ECOSYSTEM



DRIVING THE CHANGE

KEY FACTORS



Automation



Speed



Sustainability



Private Funding



>_ EARLYBIRD

KPEIRON

BULENT ALTAN



UVC | UNTERNEHMERTUM
VENTURE CAPITAL

VITO VENTURES

PORSCHE SE



AT A GLANCE

SOME NUMBERS AND FACTS ABOUT ISAR AEROSPACE

2018

founded as spinoff
from TUM

\$180m

private funding from
world-class investors

220

highly motivated
employees

Spectrum

targeted to first
launch in 2022



A 3 YEAR HISTORY

MARKED BY STEADY GROWTH

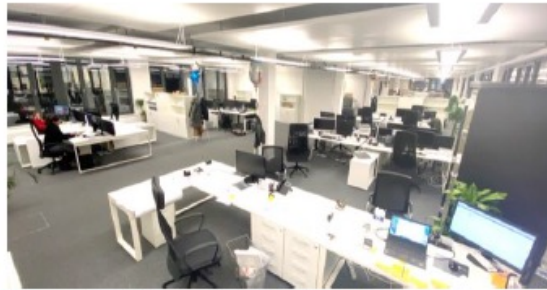
2018



2019



2020



2021





RAISED \$180m TO DISRUPT THE SPACE INDUSTRY



PORSCHE SE



BULENT ALTAN



FOUNDER-LED COMPANY

BUILDING THE FUTURE OF SPACE



Daniel Metzler
CEO
Co-Founder



Josef Fleischmann
COO
Co-Founder



Stella Guillen
CCO



Isar Aerospace employs a hands-on team of more than **220 talents** with practical experience in design, manufacturing, testing and operating high-end technical products including orbital rockets.



Bulent Altan

Board Chairman, Investor at Isar Aerospace

SpaceX VP Avionics&GNC, built electronics and software for Falcon 1, Falcon 9, Falcon Heavy and Dragon, responsible for first Starlink satellites



Clemens Kaiser

Advisor to Isar Aerospace

CTO KLEO Connect, developing global IoT connectivity constellation. Formerly Director of Development at EUMETSAT, responsible for \$B satellite programmes



Prof. Robert Schmucker

Advisor to Isar Aerospace

40+ years of hands-on experience working on Saturn V upper stage engine J-2, graduated with PhD under Saturn V core team member Prof. Harry Ruppe



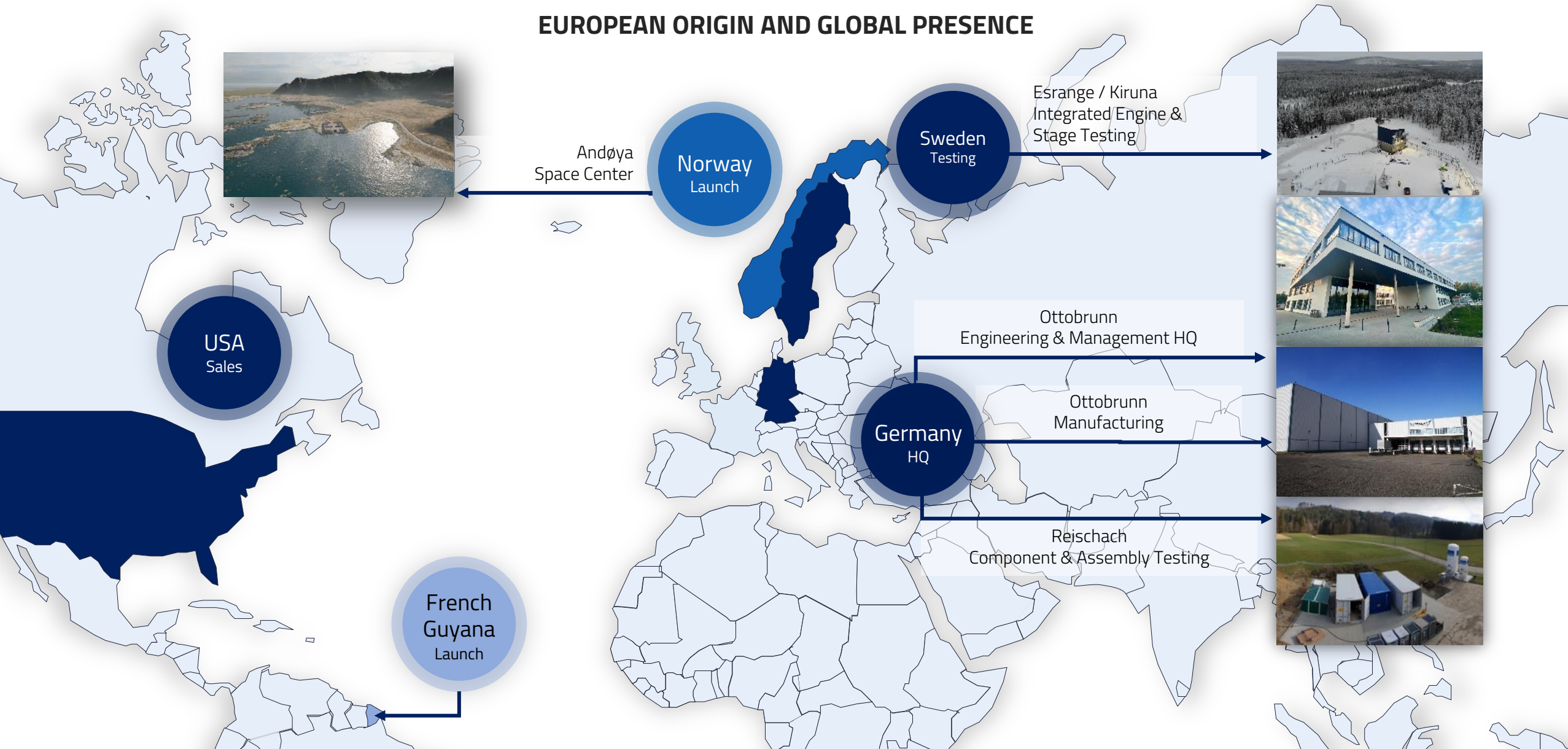
Lin Kayser

Advisor to Isar Aerospace

Director of Engineering at Adobe; CEO at Hyperganic reinventing the additive manufacturing industry

OUR LOCATIONS AND SITES

EUROPEAN ORIGIN AND GLOBAL PRESENCE



ORBITAL LAUNCH VEHICLE

SPECTRUM SECURES ACCESS TO SPACE



SPECTRUM Highlights

Clean propulsion for sustainable space access

High launch cadence will impact environment. Spectrum will be industry-winner

High-performance for low kilogram-specific pricing

The higher the payload capability, the less \$ per kilogram launched to space, pushing the commercialization of space

High scalability based on design simplicity and smart production processes

Spectrum components are designed for smart, automated production that enable scalable economics to drive down costs

1,000+ kg payload to
Low Earth Orbit



Sustainable
concept



Envisaged
reusability

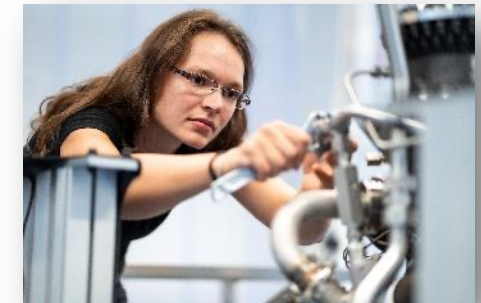
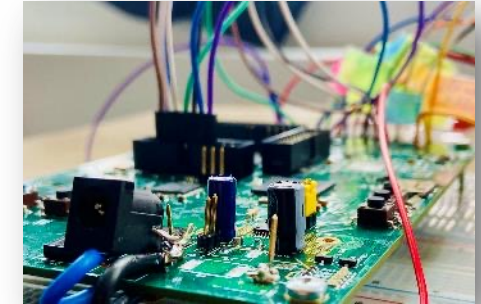


Smart production
processes



FULL IN-HOUSE DEVELOPMENT

FROM DESIGN TO TESTING



DEVELOPMENT STATUS

ONE OF THE MOST ADVANCED TEST SITES IN EUROPE

Component level propulsion testing in
Reischach, Bavaria



Integrated propulsion testrig run-in in
Esrange, Sweden



KIRUNA - ESRANGE

TRANSFORMATION INTO EUROPE'S MOST MODERN ROCKET SITE



The background of the image is a deep space scene. On the left, a large, curved portion of the Earth is visible, showing blue oceans, white clouds, and brownish-green landmasses. To the right, the Moon is visible as a smaller, grey, cratered sphere. The sky is a dark, star-filled void.

isar aerospace

Launch for life.

OUR TEAM

GLOBAL TALENT WORKING ON A GREAT MISSION

220



highly motivated
employees



40

Nationalities

OUR VALUES

INSPIRATION AND GUIDANCE FOR EVERY DAY



Teamwork = Dreamwork

Rocket science is complicated, working together should not be. Go out of your way to help others.

Know your stuff and own it.

Hold yourself responsible and accountable.

Love what you do.

Be driven by curiosity and passion. Live the dream. Do your best work.

Push the boundaries

Move fast. Be bold. If you are not failing, you're not trying hard enough.

No space for bullshit.

Ideas matter. Ego does not. Be open and honest, you owe that to yourself and to everyone around you.

CHOOSE YOUR SEAT

SELECT YOUR JOURNEY TO ORBIT

DEDICATED



Fly alone and determine
your orbit and time of
launch

LEAD



Set your destination and
time of launch while flying
with others

RIDESHARE



Enjoy routine rides with
others to a predetermined
orbit

