

# **Mr. Jonas Gauger**

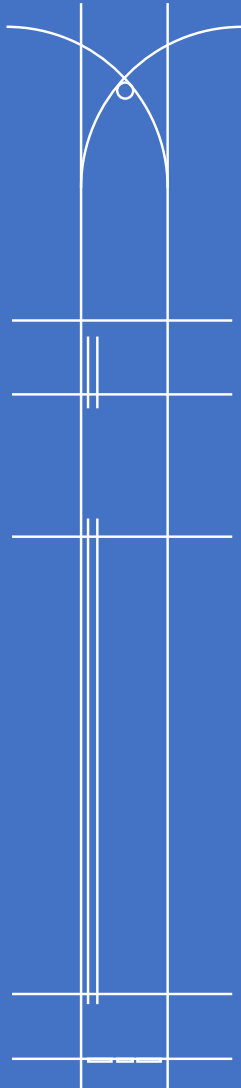
Director Program Area Electronics at RUAG  
(Beyond Gravity)



Your Launch into the New Space

# How to reach orbit with groundbreaking efficiency

# Multi-trillion-euro space industry



Morgan Stanley estimates a close to **1.0€ trillion** market by 2040.

Bank of America estimates growth up to **2.2€ trillion** by 2045.

# What we do

---



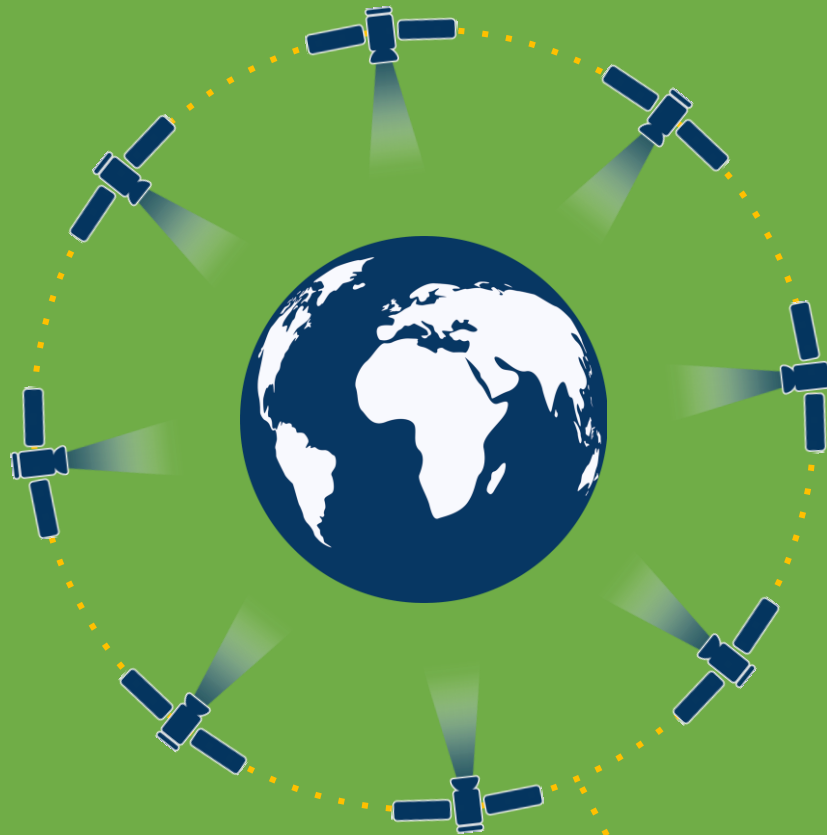
We build **rockets**  
to launch satellites into space,  
enabling the emerging  
multi-trillion space economy.

# Seizing the opportunity

Satellite constellations are the cornerstone for high-growth market applications

## Earth observation

- Mapping
- Precision farming
- Infrastructure monitoring
- Logistics and mobility
- Remote sensing



Low Earth Orbit < 2000 km

## Connectivity from space

- Internet of things
- Broadband
- Narrowband
- Cloud computing
- Business intelligence



# SpaceX Starlink Connects German Communities after Disastrous Flood





---

**We are losing control of our life support system.  
Let's put eyes in the skies to better understand it.**







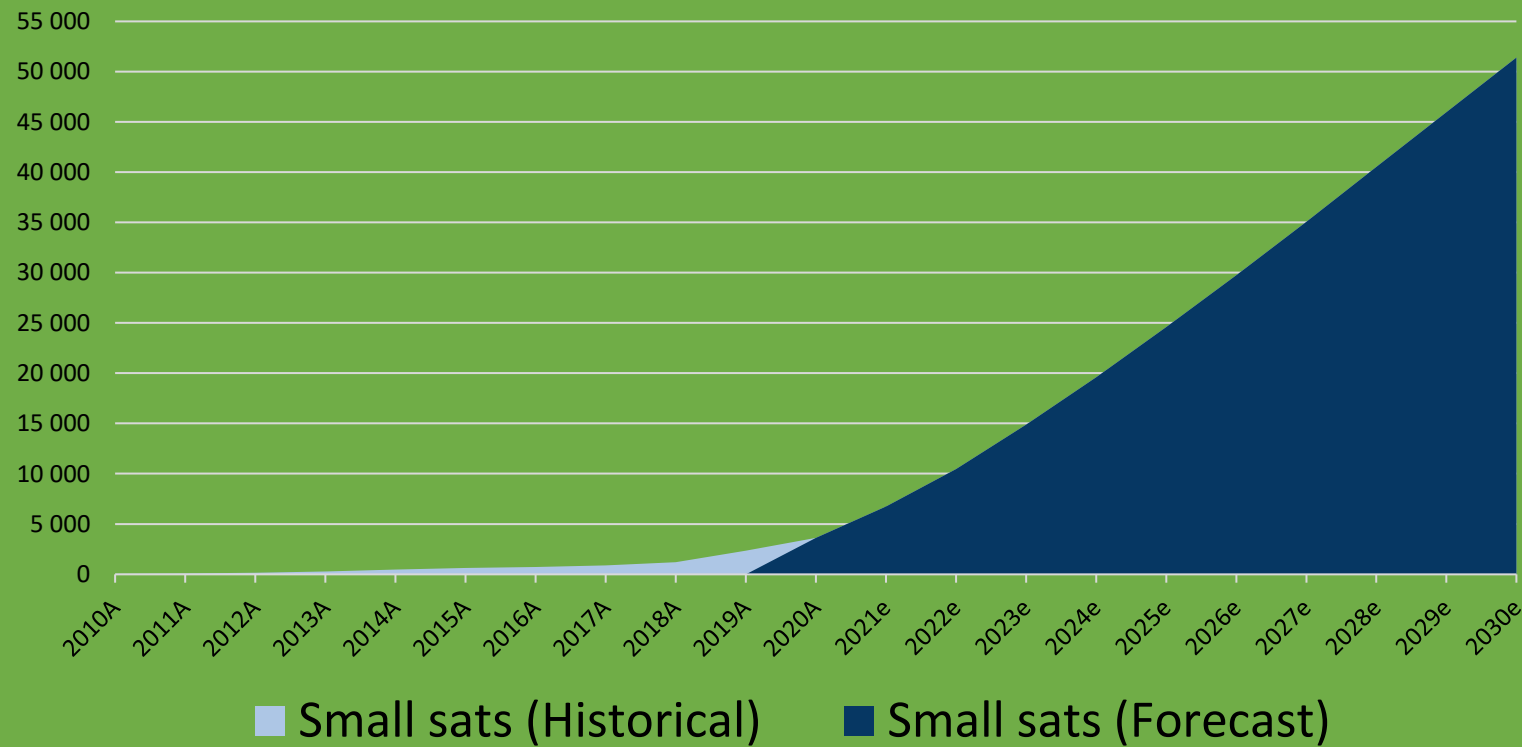
Data is reshaping the world. Hyperspectral video-streams from space will provide for it.



# Strong growth in satellite launches

Increasing demand for value added services drives growth especially for small satellite constellations

Global satellite constellations, cumulative



Over the next decade:

**+42,500**

satellites in  
SatCom constellations

e.g. Mangata Networks, Telesat

**+8,000**

satellites in Earth Observation  
constellations

e.g. OHB, Planet

**+150**

satellites in other missions

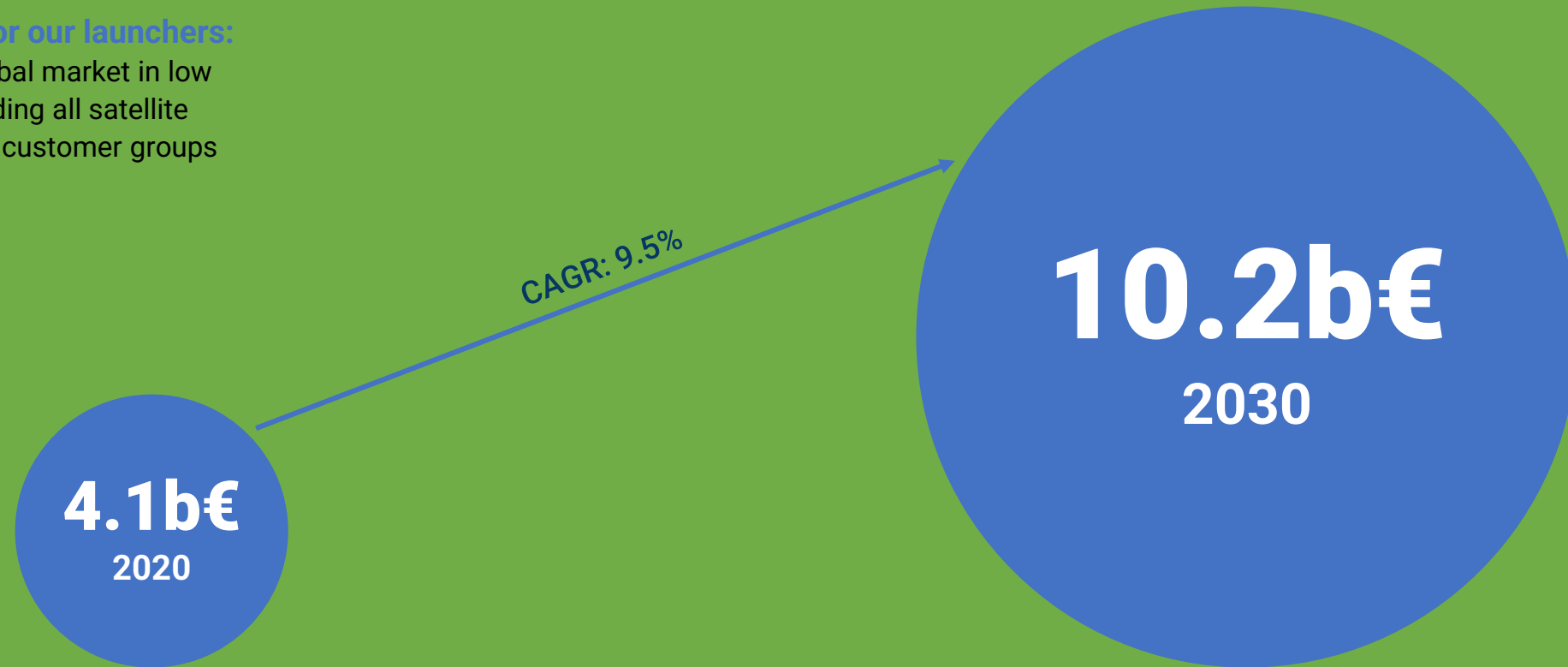
e.g. InSpace Mission

# Creating an exploding market

Sales of small satellite launches are predicted to more than double in ten years

## Total Market for our launchers:

Focus on the global market in low Earth orbit, including all satellite applications and customer groups





# We are addressing three key problems ...

Limitations of today's offerings for satellite launches create pain points for customers

---



## Complexity

**Immense handling and organisational efforts**, no end-to-end service for small satellite launches to LEO



## Inflexibility

**Launch is the bottleneck in small satellite value chain deployment**, since heavy launchers have inflexible launch schedules and no last mile delivery for dedicated orbits



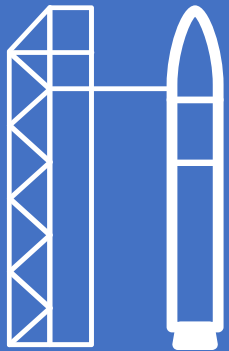
## High prices

**Space transportation is the highest cost block** for small satellite operators to bring constellations into use

# ... with three innovative key solutions

We are easing our customers' pain points with cutting-edge technology delivering robust results

---



## Superior technology

Our **propulsion system** is more powerful, more efficient and **significantly more sustainable** than conventional technologies.



## Lowest cost

We **industrialize rocket production** and **focus on reuseability**.

Standard industrial parts and highly efficient production technologies create unique cost advantages.



## Last mile delivery

We go the extra mile. Our **orbital stage** can **precisely position up to 100 satellites**. Entire satellite constellation deployments are possible with just one launch.



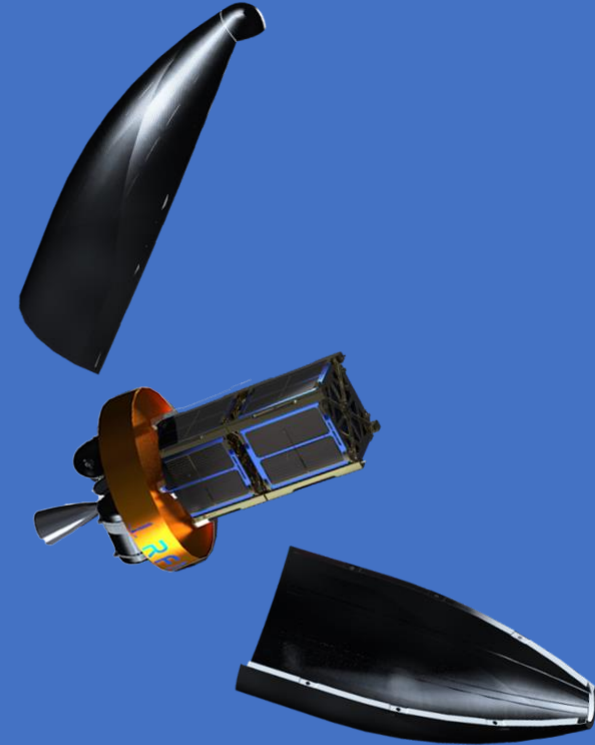
# A unique combination of features

The most impactful technological highlights of our launcher

---

## Propulsion System Cluster

Our staged-combustion technology combines high performance with cost efficiency transferred from automotive serial production.

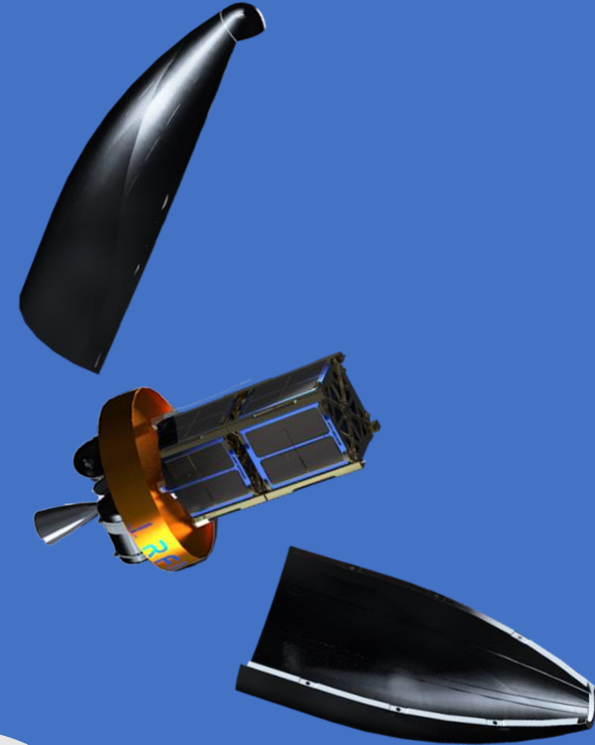


# A unique combination of features

The most impactful technological highlights of our launcher

## Propulsion System Cluster

Our staged-combustion technology combines high performance with cost efficiency transferred from automotive serial production.



## Stage Structures

We use a common tank design made of inexpensive stainless steel for maximum cost efficiency.



# A unique combination of features

The most impactful technological highlights of our launcher

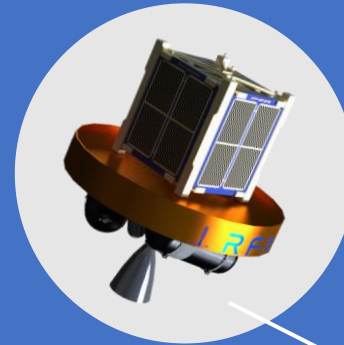
## Propulsion System Cluster

Our staged-combustion technology combines high performance with cost efficiency transferred from automotive serial production.



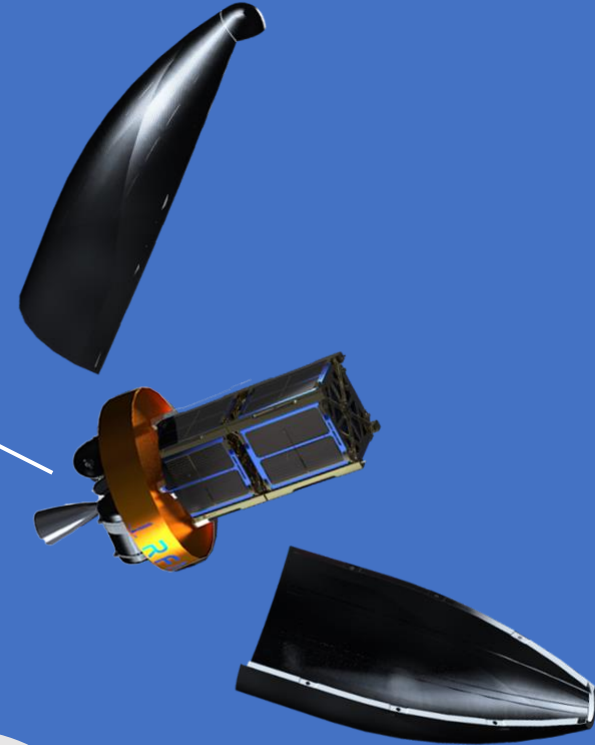
## Orbital Stage

Our in-house developed orbital stage allows us to deliver a payload of 1,300 kilograms to space, bringing satellites to the specific orbits our customers desire.



## Stage Structures

We use a common tank design made of inexpensive stainless steel for maximum cost efficiency.



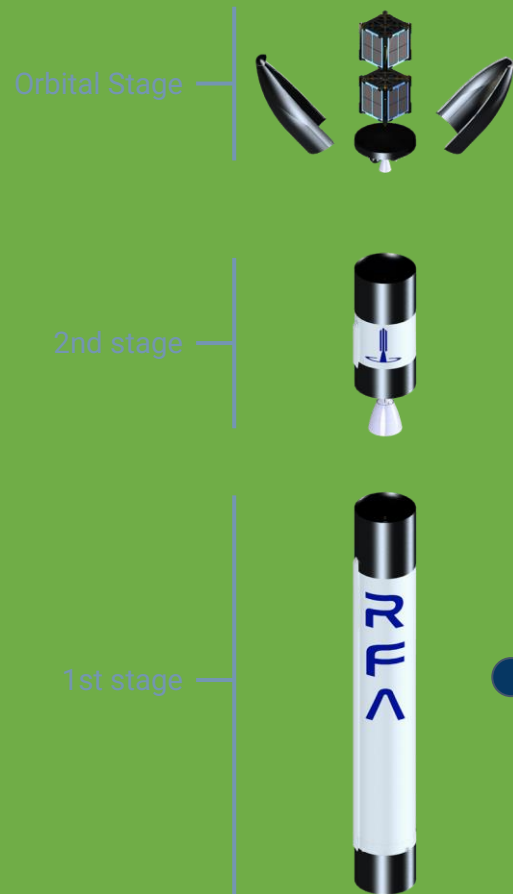
**Our promise**

---

**Creating a  
Henry-Ford-moment  
in spaceflight**

# Aiming for extensive reusability

We operate our launchers like a taxi fleet that is continuously repaired and upgraded



1st stage accounts for **65%** of total cost

Maximum reusability leads to **85m€** reduction of capital expenditure for infrastructure

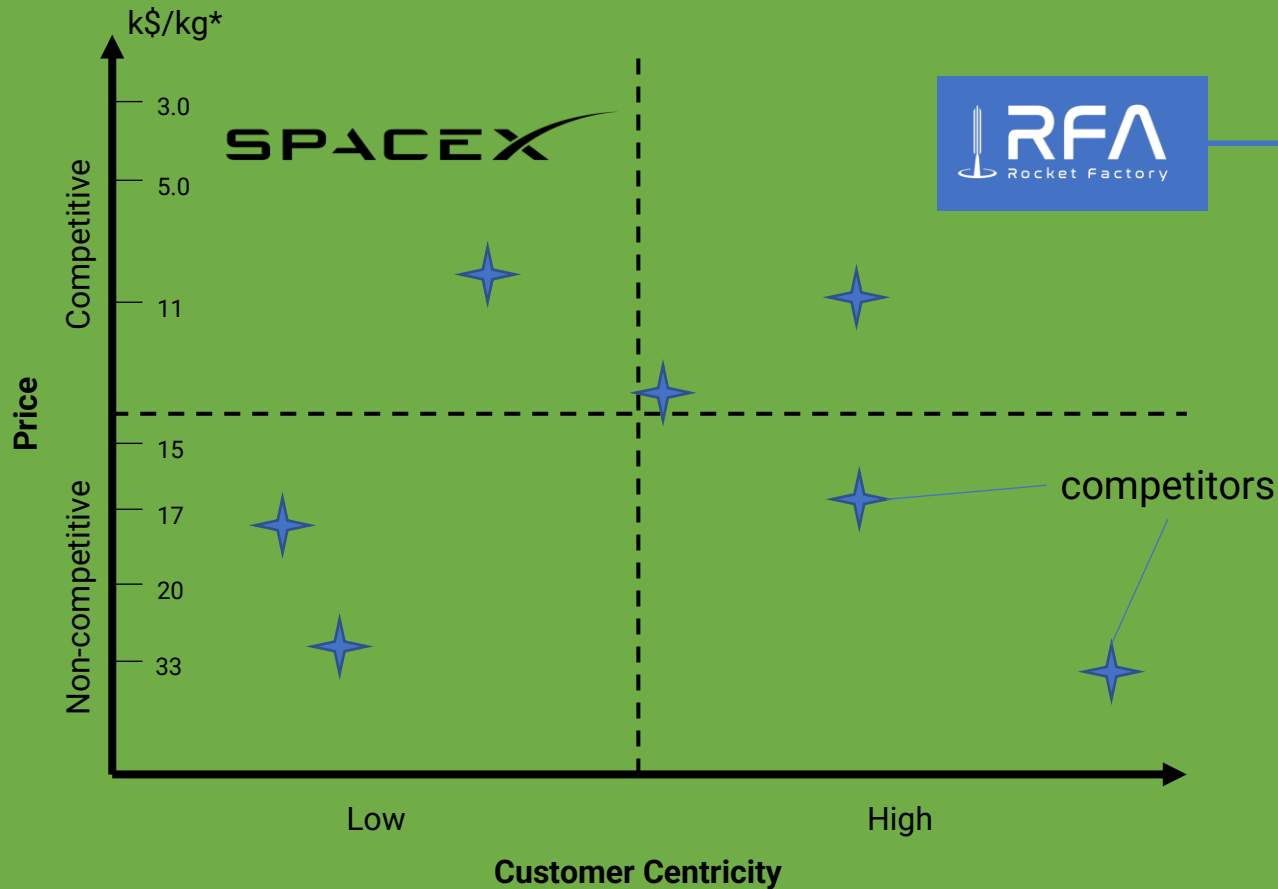
## Our Approach:

- Every aspect – material selections, manufacturing processes and designs – is developed with the goal of extensive reusability
- Fully-automated post-flight inspection that allows parts and systems to be screened for defects
- Frequent reuse of the first stage pushes production capacity down to an efficient minimum, having a positive impact on CAPEX



# RFA's competitive edge

## We outperform competition on price and customer centricity



## Our differentiation

 $2-3x$ 

Lower prices through industrialized rocket production and reuseability



We offer bespoke end-to-end service, last mile delivery and unseen launch numbers.

# RFA One combines the best of both worlds

Current microlaunchers lack payload capacity, while heavy-lift launchers are too inflexible

## Microlaunchers



## RFA One



## Heavy-Lift Launchers



Payload	50 kg – 1,250 kg
Price (per kg)	> €10,000
Cadence	< 30
Dedicated orbits	Yes
Constellation Deployment	No

up to 1,300 kg
€2,000 - €3,000
> 50
Yes
Yes

> 10,000 kg
> €5,000
< 30
No
Yes



**RFA**  
Rocket Factory

@BocaChicaGal  
NASASpaceFlight.com











Test Site: Established

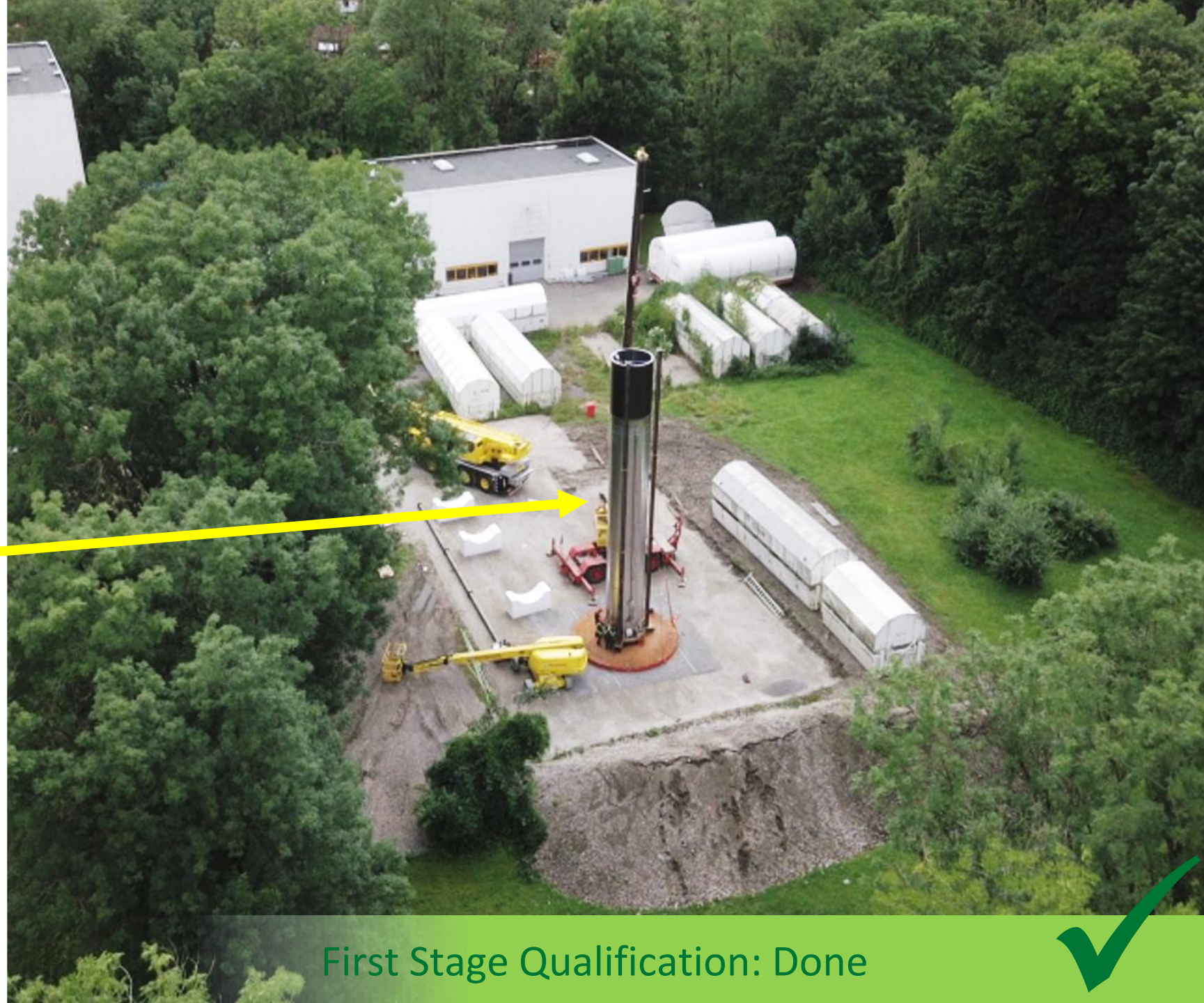




Engine Hot Fire to Thermal Steady-State







First Stage Qualification: Done



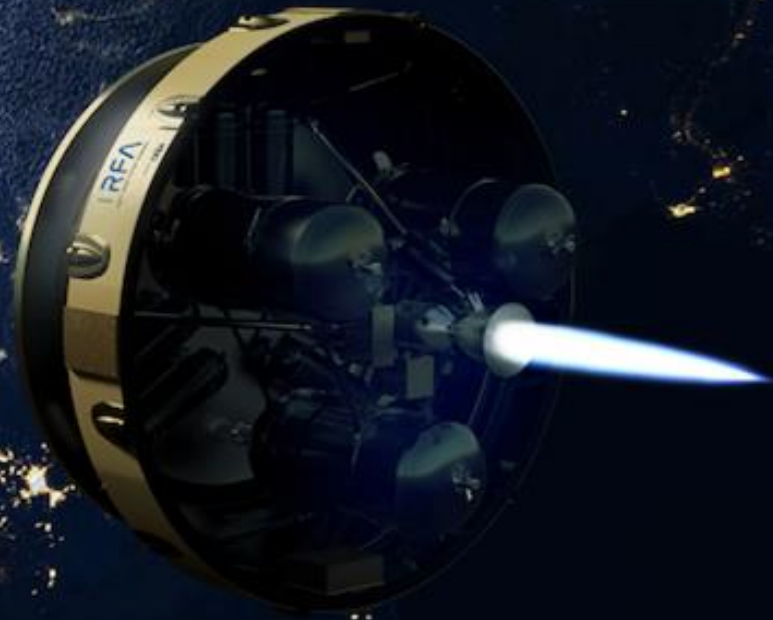






# Thank you for joining our mission

---



Follow us on Social Media!

