



ENABLING BUSINESS IN SPACE WITH RADICAL EFFICIENCY





Doing business in space is hard.

RFA ENABLES SPACE-BASED BUSINESS WITH

- HIGHLY EFFICIENT LAUNCHERS AND
- IN-ORBIT SERVICES THAT MAKE OPERATING SATELLITES EASIER.

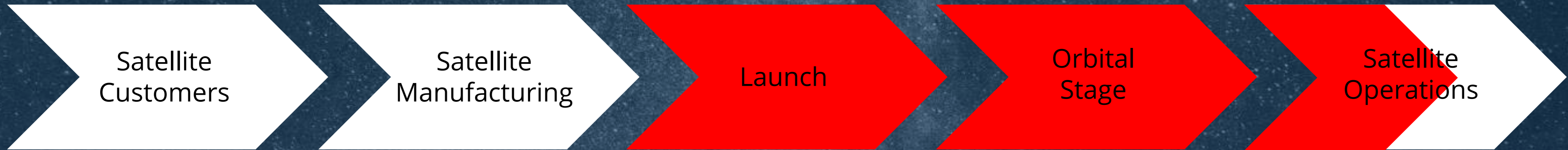
HIGHLY EFFICIENT LAUNCHERS

- Credible cost leadership based on real technical advantages in propulsion and structure
- Cost-efficient reusability and scalability as core design principles
- Asset-light manufacturing approach leveraging automotive industry expertise
- Global network of launch platforms and weekly launch cadence

IN-ORBIT SERVICES FOR SATELLITES

- Credible tech leadership based proven small-sat platform (3rd stage of launcher)
- Fast-growing fully owned and operated service network due to high launch cadence
- Focus on in-orbit services that make managing satellites or constellations more efficient
- Space-debris deorbiting as final (and monetized) stage in lifecycle

BRIDGING THE GAP IN SAT VALUE CHAIN



HIGHEST COST & BOTTLENECK



Micro Launcher



Last mile delivery



Satellite constellations

Space Services



Value added services



Serial production



Exemplary customers



PRICE LEADERSHIP & RE-USABILITY BUILT INTO ROCKET DESIGN FROM DAY ONE

PROPULSION SYSTEM CLUSTER

Staged-combustion technology

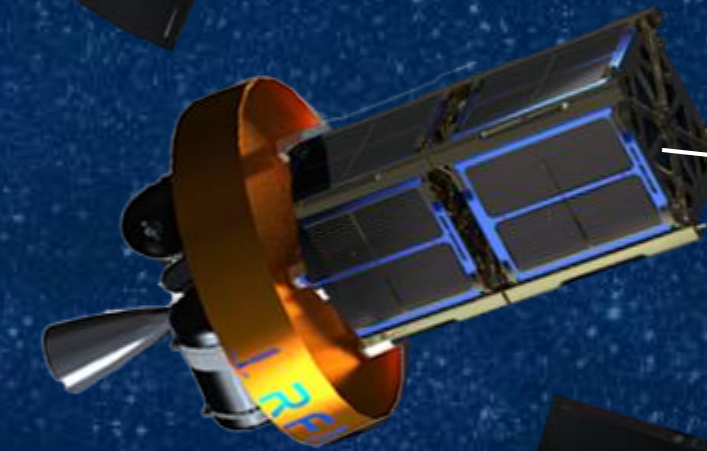
High performance | Cost efficiency transferred from automotive serial production |

SpaceX proven propulsion technology | Rocket Factory only company to implement this technology in Western Europe |



STAGE STRUCTURES

Common tank design | Made of inexpensive stainless steel | Maximum cost efficiency |



PROPRIETARY ORBITAL STAGE

Proprietary Orbital Stage | Most competitors lack or have to buy Third Stage | Third Stage delivers a payload of 1,300 kilograms to space | Positioning whole satellite constellations to their final orbits |

DESIGNED FOR SCALABILITY

RFA ONE

Diameter = 2.15m, Length = 32m, D-to-L = 15

13x first-stage engines → max. payload (into 300km orbit) = 1.3 tons (expendable)



RFA ONE – RE-USEABLE

Diameter = 2.15m, Length = 43m, D-t-L = 20

17x first-stage engines → max. payload (into 300km orbit) = 1.3 tons (re-usable, 2.3ton expendable)



RELEVANT DESIGN-TO-COST INSIGHTS

Diameter changes of vehicle in up-scaling are a massive cost driver

Vehicle length is not a (massive) cost driver but allows for more propellant

SpaceX Falcon 9 established Diameter-to-Length ratio of 20 as feasible

Engine clustering allows for massive cost savings in up-scaling, in particular with first-stage reusability

WE BRING A SAT CONSTELLATION TO A DEDICATED ORBIT – BEATING COMPETITION ON PRICE & SERVICE

CURRENT MICROLAUNCHERS
LACK PAYLOAD CAPACITY



RFA DELIVERS ENTIRE
CONSTELLATION TO FINAL ORBIT



HEAVY LAUNCHERS DON'T DO
LAST MILE

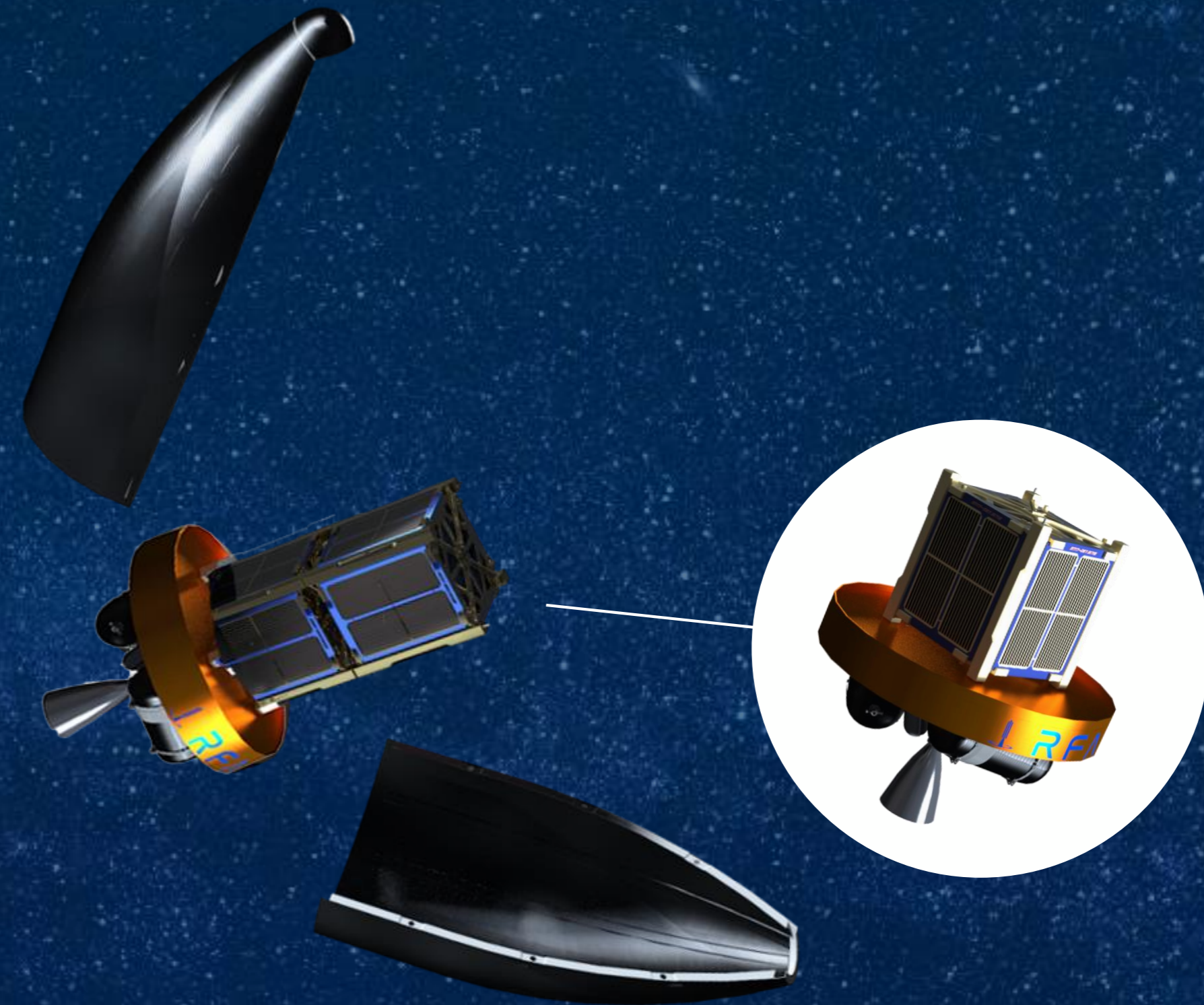
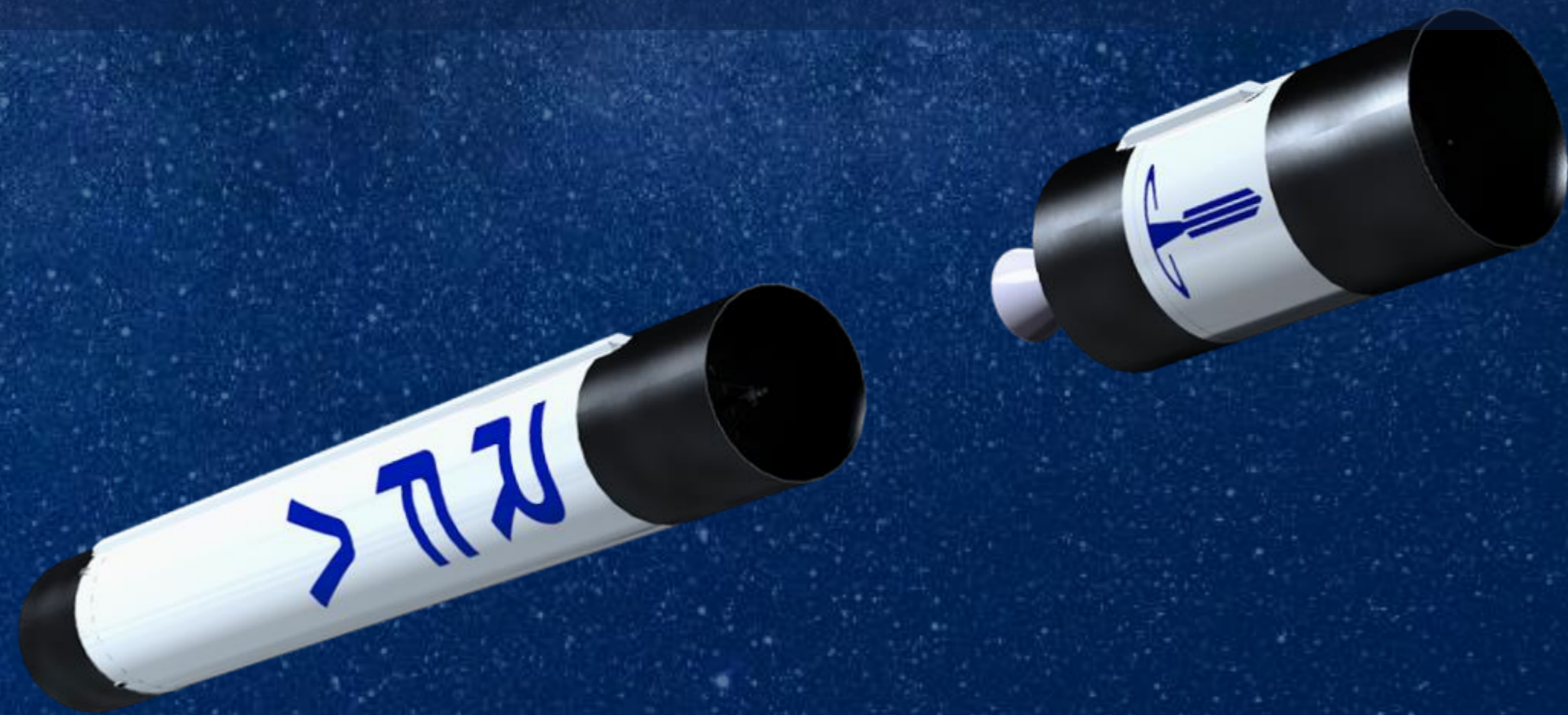


Payload	200 kg – 700 kg	up to 1,300 kg	> 10,000 kg
Price (per kg)	> U\$10,000	U\$3,000-4,000	> U\$5,000
Cadence	< 30	> 50	< 30
Dedicated Orbits	Yes	Yes	No
Constellation Deployment	No	Yes	Yes

Tech highlights: Proprietary Orbital Stage

Proprietary Orbital Stage developed with OHB

Most competitors lack or have to buy Third Stage



Third Stage delivers a payload of 1,300 kilograms to space
Positioning whole satellite constellations to their final orbits

RFA = AAA FOR SATELLITES

Focus on in-orbit services that make managing satellites or constellations more efficient
Space-debris deorbiting as final (and monetized) stage in lifecycle



Service Provision

- Inspection via „Diagnosis Device“
- Refuelling w/ fluids and gases
- Dock & steer – AOCS
- Energy supply
- End-of-life management, ADR
- Asset monitoring

Provision of Plug&Play Interfaces

- Inspection
- Fuelling
- Docking

GLOBAL REACH

>3 confirmed launch sites, for commercial & institutional customers

Modular launchpad design to benefit from launch site competition

Australia: regulatory environment, South East Asian Small Sat market and relevant launch site



COMMERCIAL PIPELINE > U\$600m



PROVEN SALES CHANNELS

Sales team with access to OHB | Customer network in space industry
Brokers gather small payload from various customers | Rideshare

SERVICE OF AN UBER FOR THE PRICE OF A BUS-TICKET



SUPERIOR | SUSTAINABLE TECHNOLOGY

Our propulsion system is more powerful
more efficient &
significantly more sustainable than conventional technologies.



LOWEST COST

Industrialize rocket production
Focus on reusability
Standard industrial parts
Highly efficient production technologies
Unique cost advantages



LAST MILE DELIVERY

We go the extra mile
Our orbital stage can precisely position up to 100 satellite
We deploy entire satellite constellations with just one launch



SPACE SERVICES

Service satellites
Constellation Replenishment
Satellite Upgrading
Satellite Refuelling
Space Debris Removal

MILESTONES DELIVERED – ON THE ROAD TO LAUNCH IN 2023

RFA FOUNDATION

RFA Aktiengesellschaft | private investment



AUG 2018

2ND STAGE PROTOTYPE

Completion and qualification of 2nd stage tank



OCT 2019

TEST INFRASTRUCTURE

Completion of engine prototype and test site implementation



SEPT 2020

STAGED COMBUSTION

Executing main engine test campaign



MAY 2021

1ST TURBOPUMP

First successful tests of RFA turbopump



JUN 2019

3RD STAGE ENGINE

First fire test of the orbital stage engine



JAN 2020

NEW FACILITY

100+ employees, 5 000 sqm facility



FEB 2021

1ST DEMONSTRATOR

Burst test of core stage



AUG 2021

Confidential



JOIN OUR MISSION

ROCKET FACTORY AUGSBURG AG
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