VIENNA UNIVERSITY OF TECHNOLOGY

SPACE TEAM

2016

office@spaceteam.at

/tuspaceteam

TU WIEN SPACE TEAM 2013

TU WIEN SPACE TEAM 2016

PROJECTS

- CUBE SAT – PEGASUS
- LUNAR LANDING MODULE
- LIQUID ROCKET ENGINE
- EXPERIMENTAL ROCKETS

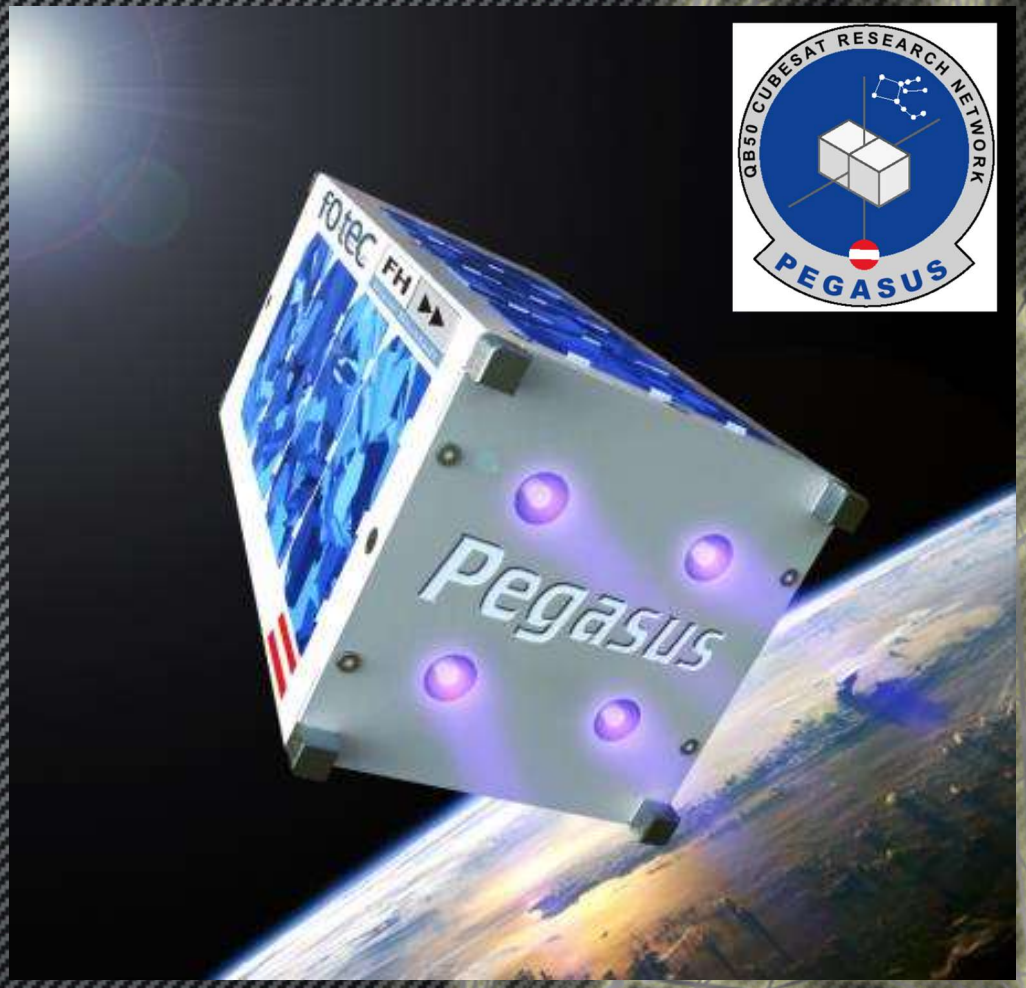
Launched: *STR-01, STR-02, STR-03, STR-03A, STR-04, STR-04A, STR-NEEDLE, STR-05, STR-06*

Current: *STR-06, THE HOUND and Propulsion (engine development)*

PROJECT PEGASUS – Q 50

or

…how can students build their own Cube Sat!



FH Wiener Neustadt

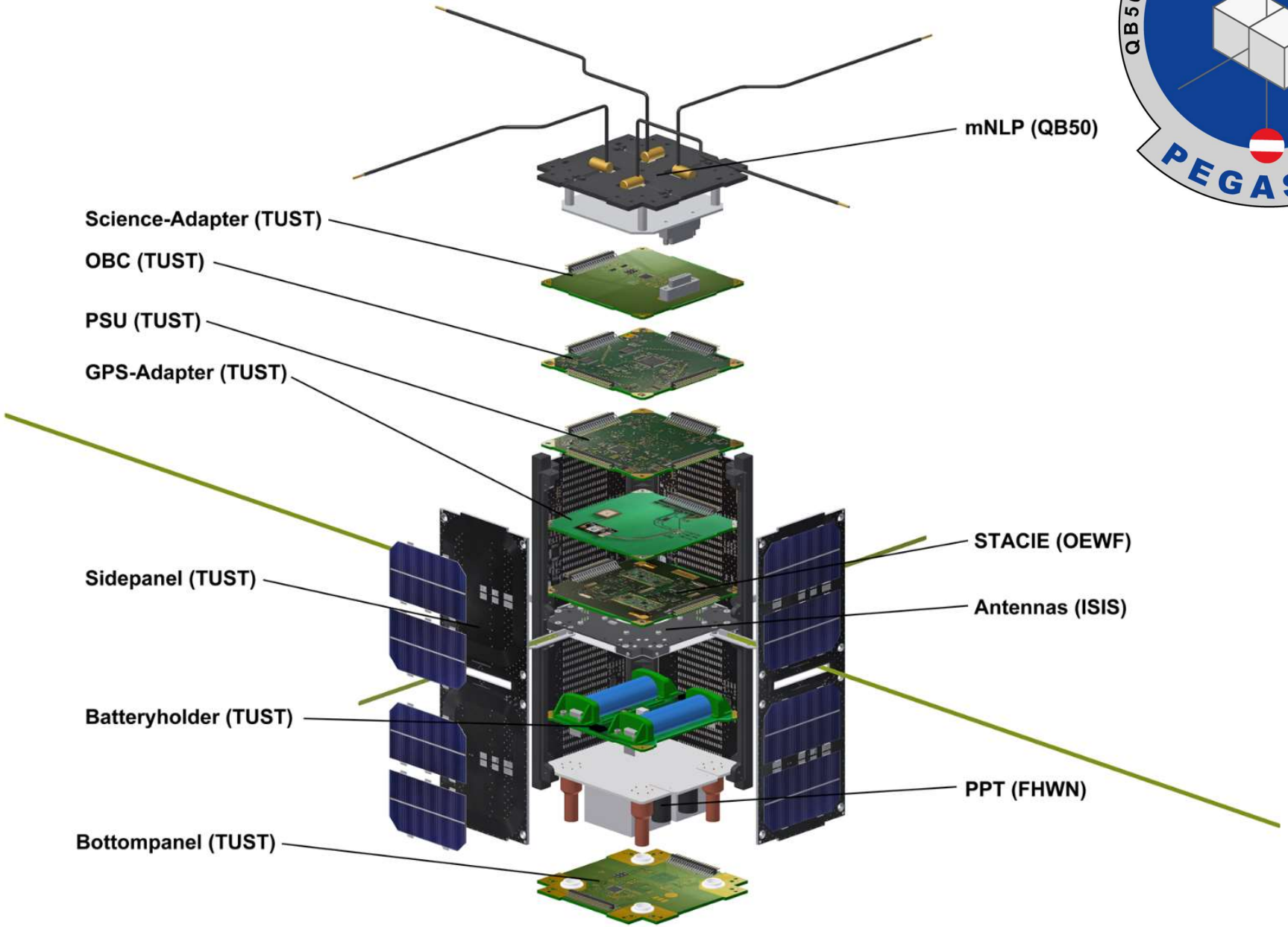
TU WIEN SPACE TEAM

institut für astrophysik

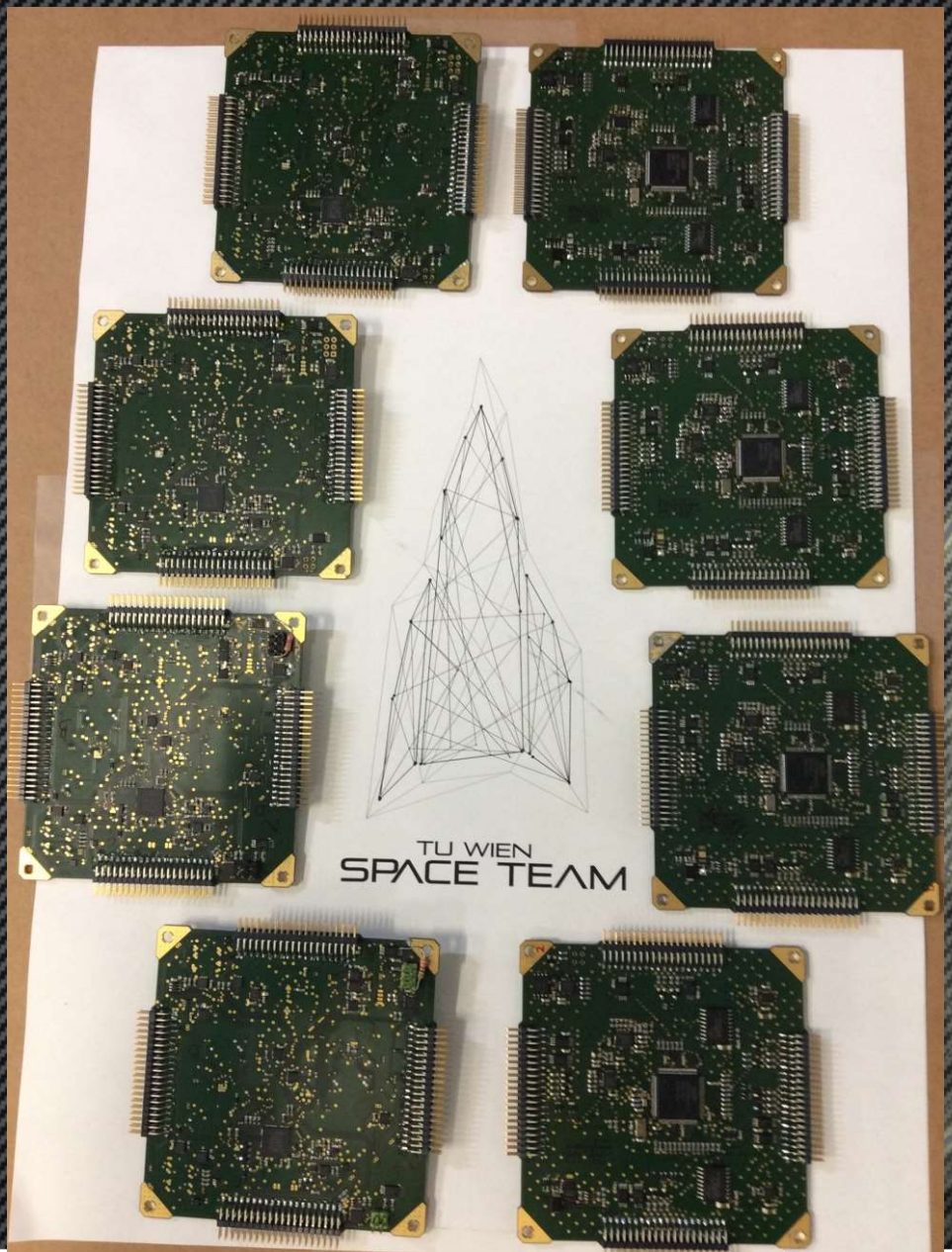
ÖWF

fotec

PROJECT PEGASUS – QB50


mNLP (QB50)
Science-Adapter (TUST)
OBC (TUST)
PSU (TUST)
GPS-Adapter (TUST)
STACIE (OEWF)
Sidepanel (TUST)
Antennas (ISIS)
Batteryholder (TUST)
PPT (FHWN)
Bottompanel (TUST)

CURRENT HARDWARE




MISSION
TO THE
MOON
Google
LUNAR
XPRIZE

LUNAR LANDING MODULE


TU Wien
Austria
PIT 39
CAR 41
TU Wien
Austria
FORMULA STUDENT HUNGARY
EVENT CONTROL
/ DRIVER REGISTRATION

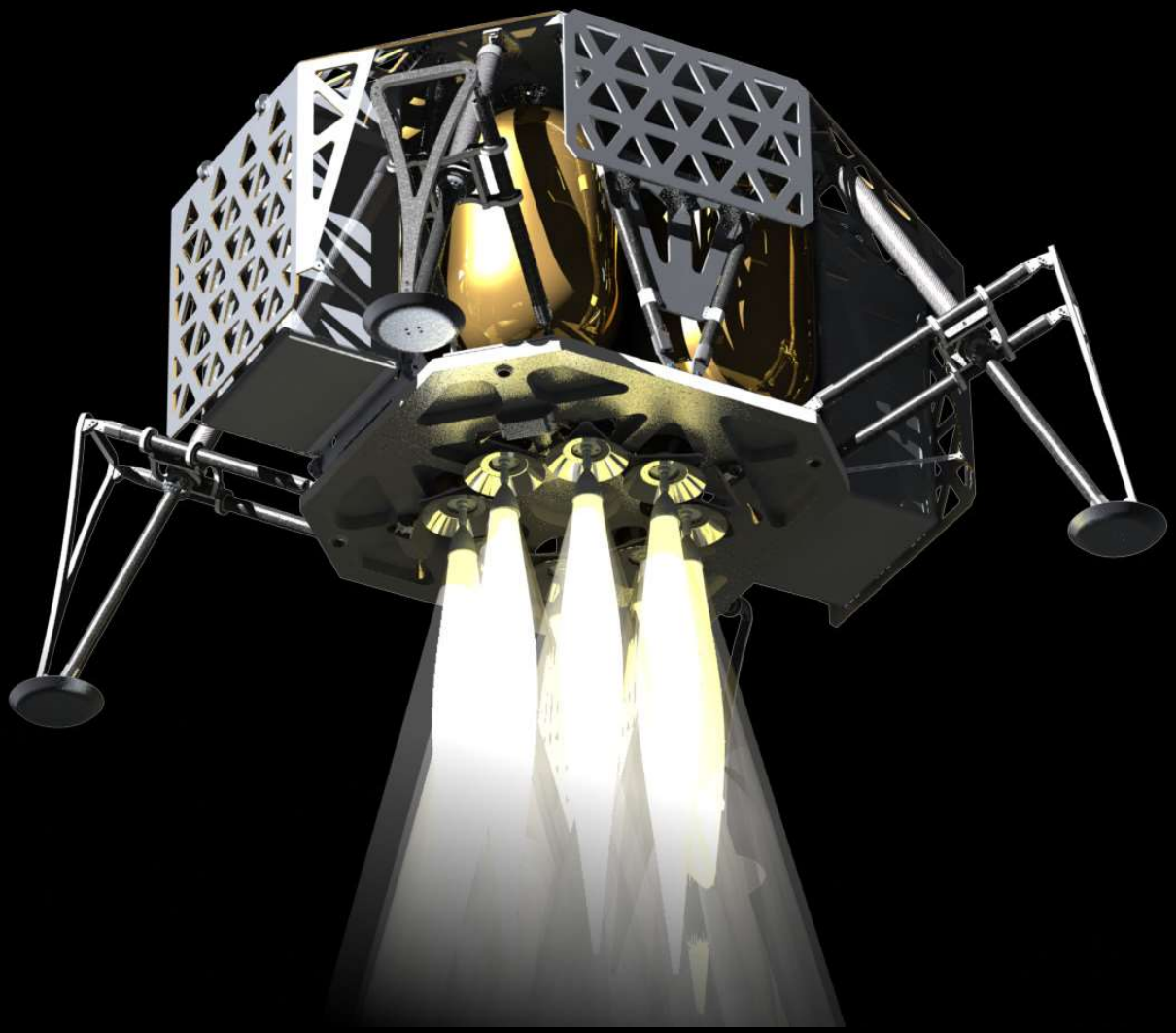

Furt
TUW RACING
TU VIENNA
PEAK TECHNOLOGY
Hoosier
RACE


TU WIEN
SPACE TEAM
TURM A
040 UNIVERSITÄTSBIBLIOTHEK
010 UNIVERSITÄTSDIREKTION
TURM C
TURM B
bmvit
FFG
VIENNA UNIVERSITY OF TECHNOLOGY
SPACE TEAM
Together ahead.
RUAG
AMARI
metal innovations
KVT
rotmund
igus

MISSION TO THE MOON

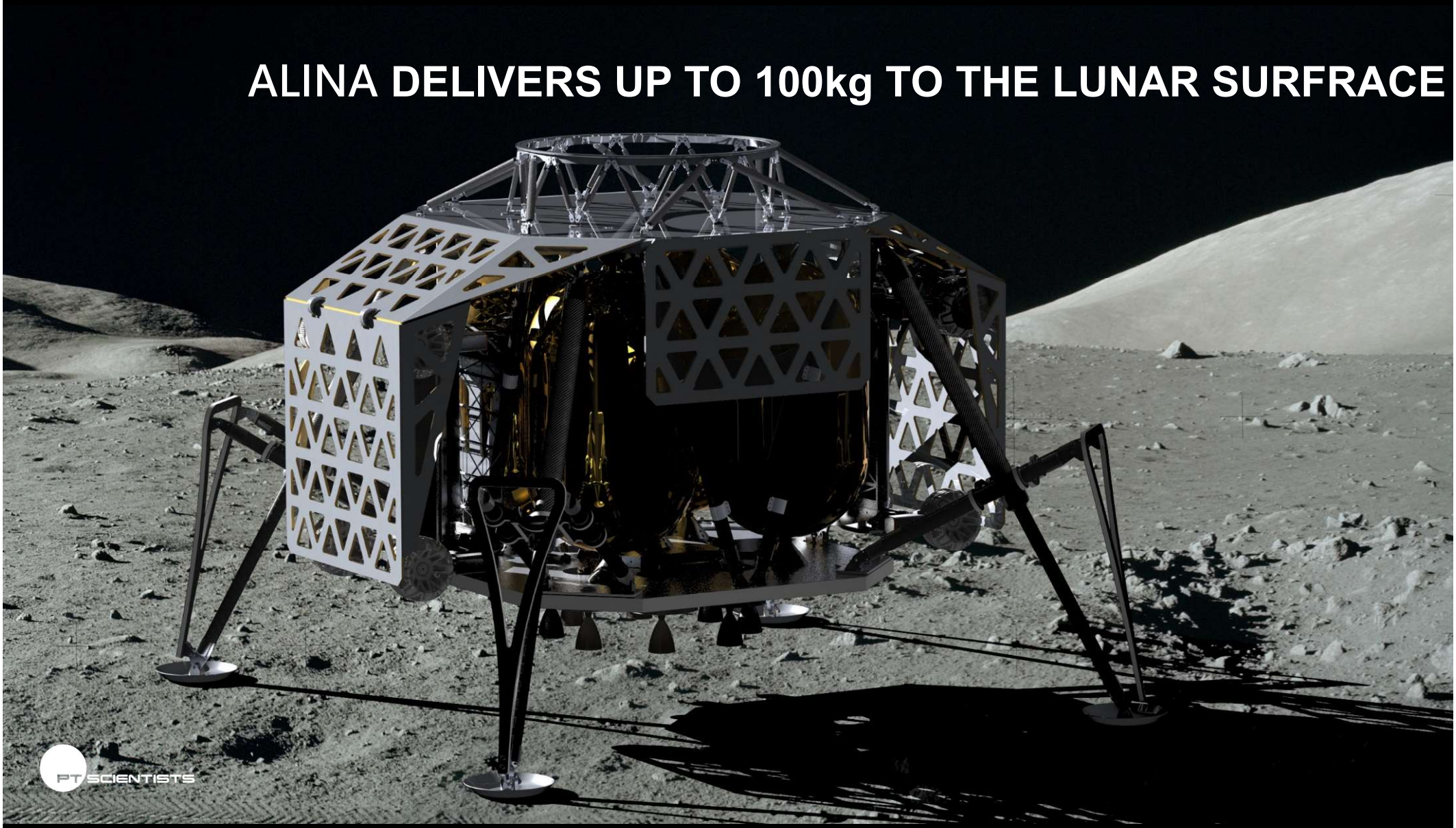
ALINA

AUTONOMOUS LANDING AND NAVIGATION MODULE



PT SCIENTISTS

ALINA **DELIVERS UP TO 100kg TO THE LUNAR SURFRACE**




PT SCIENTISTS
MISSION TO THE MOON
TU WIEN SPACE TEAM
TU WIEN SPACE TEAM
TU WIEN SPACE TEAM
XPRIZE
XPRIZE

SPACE TEAM ROCKET EVOLUTION

ORIGIN

HORNET

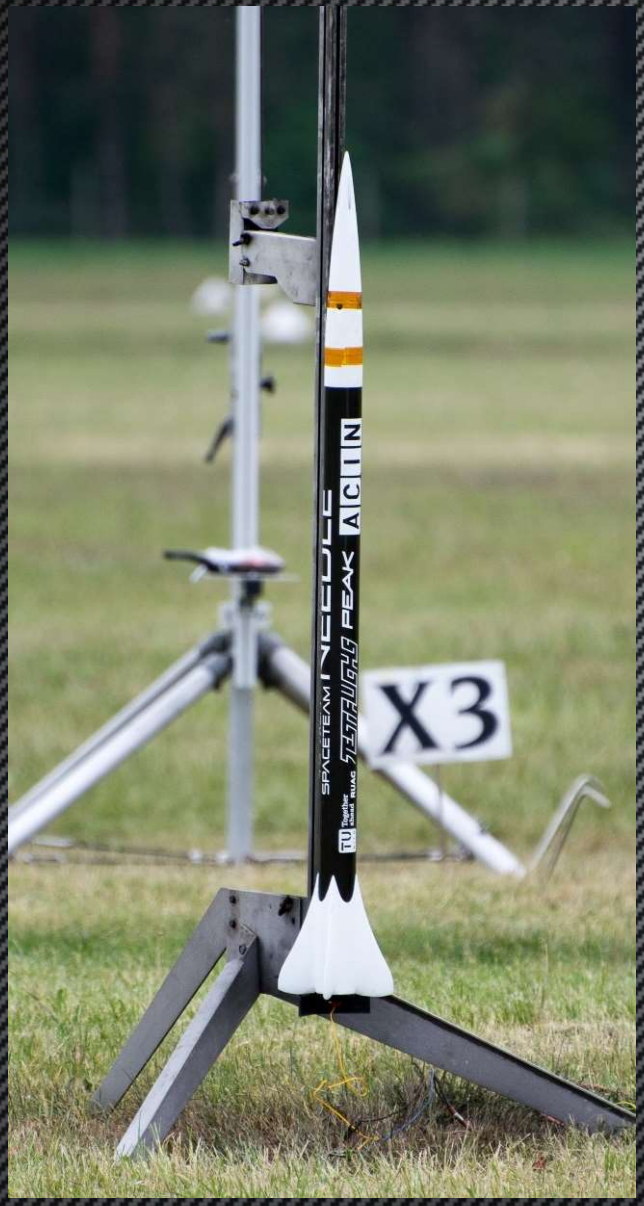
BLACKBIRD

SPACE TEAM ROCKETS 2014

PHOENIX

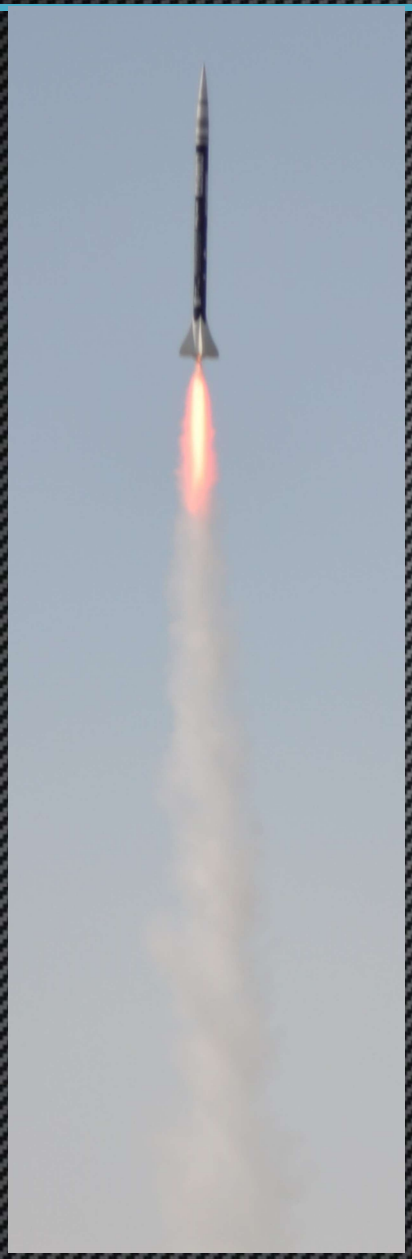
STRIVE

SPACE TEAM ROCKETS 2015



SPACE TEAM ROCKETS 2016

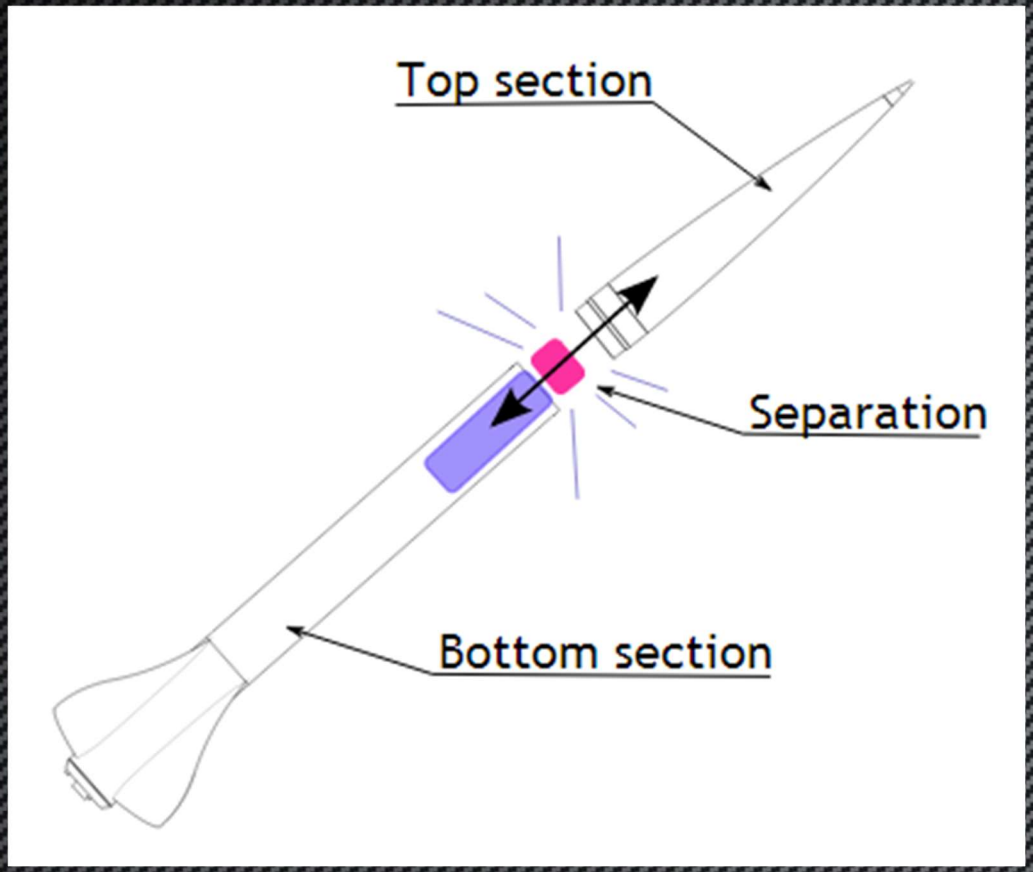
NEDLE



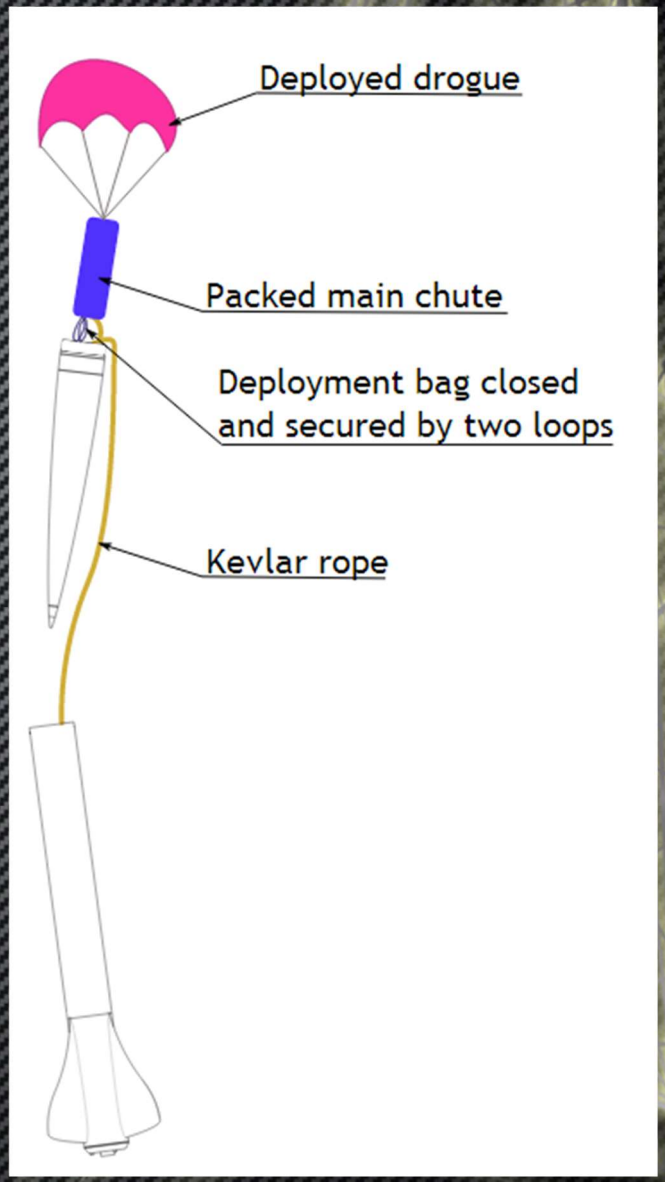
STR-06

STR-04^

RECOVERY



Descend velocity with Drogue: 15 m/s



OUR PATH TO 42 KM

GOAL:

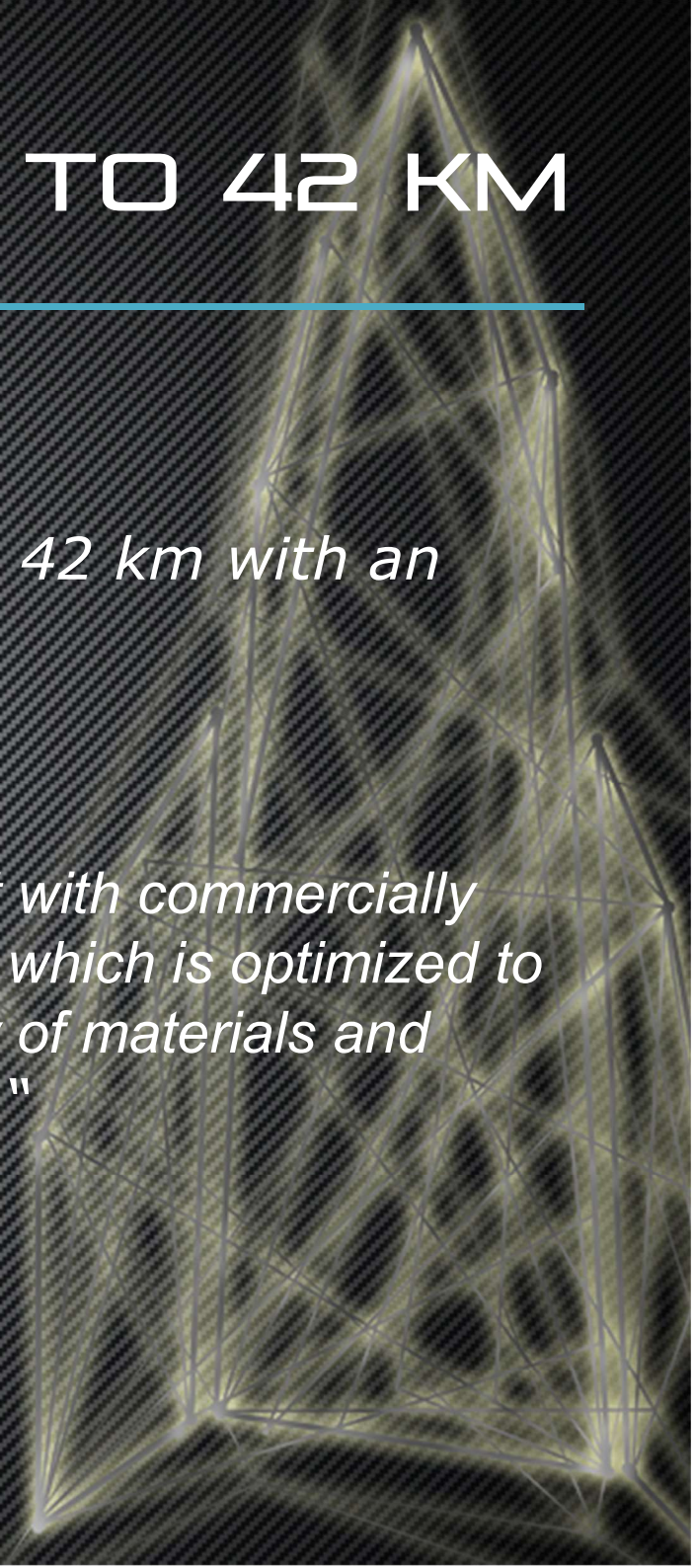
„We want to reach an altitude of more than 42 km with an amateur rocket!“

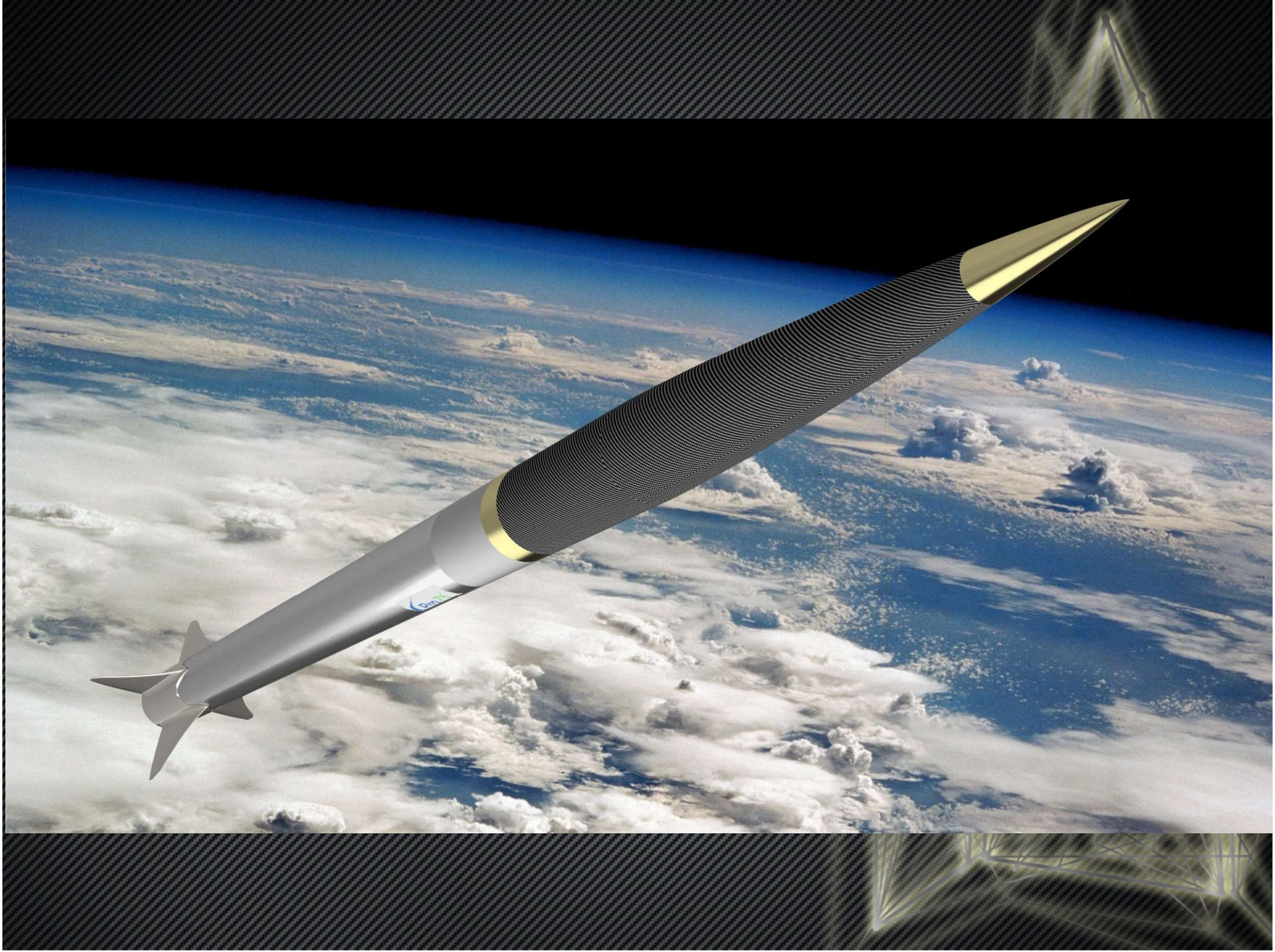
PLAN:

„The objective here is to build a two stage rocket with commercially available motors below a total impulse 30000 Ns, which is optimized to achieve highest possible altitude (in the boundary of materials and manufacturing techniques available to our team). “

TIMELINE:

Launch in 2017!





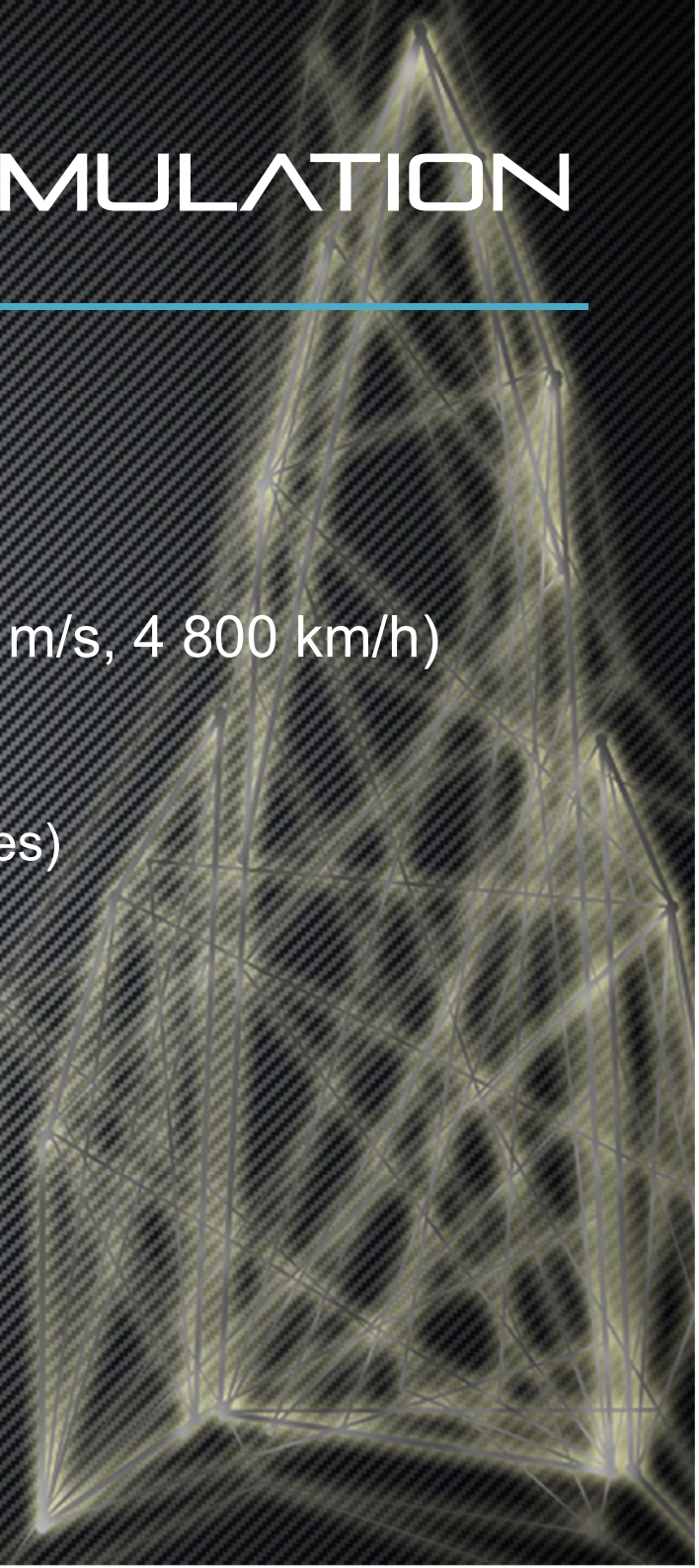
SIMULATION

KEY VALUES:

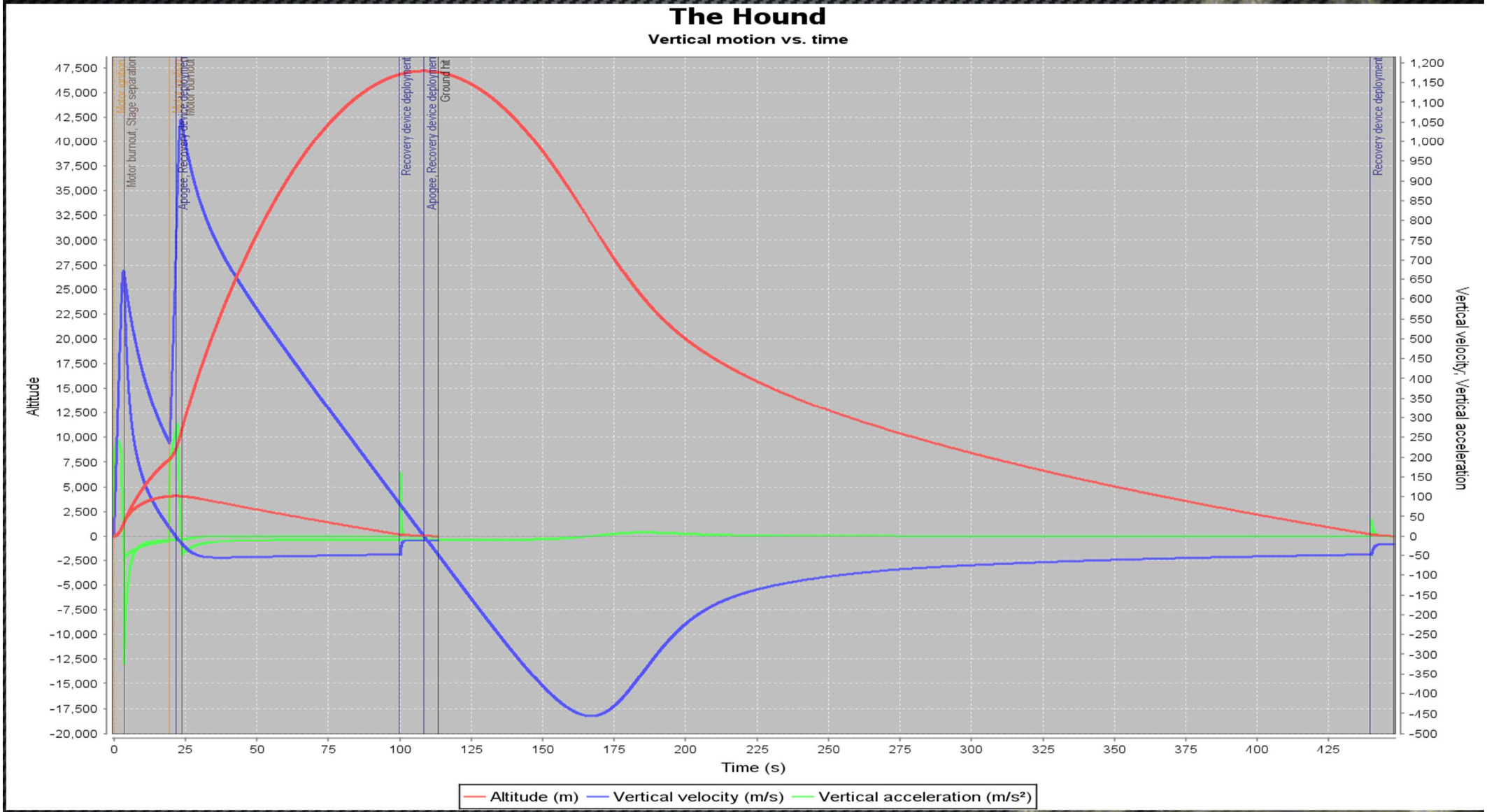
Max. Altitude:	50 km
Max. Velocity:	Mach 3.9 (1 300 m/s, 4 800 km/h)
Max. Acceleration:	40 g
Max. Thrust:	0.7 t
	(approximate values)

MOTORS:

Sustainer:	CS N5800
Booster:	CS M2245



SIMULATION


The Hound
Vertical motion vs. time
Altitude
Vertical velocity; Vertical acceleration
Time (s)
Motor ignition
Motor burnout, Stage separation
Apogee, Recovery device deployment
Motor burnout
Recovery device deployment
Apogee, Recovery device deployment
Ground hit
Recovery device deployment
Altitude (m)
Vertical velocity (m/s)
Vertical acceleration (m/s²)

CHALLENGES

ORGANISATIONAL:

- Launch-Possibilities
  - Europe
  - South-Africa
  - USA
- Funding

TECHNICAL:

- Mechanical Strains
- Thermal impact
- Parachute and Recovery
- Telemetry and GPS

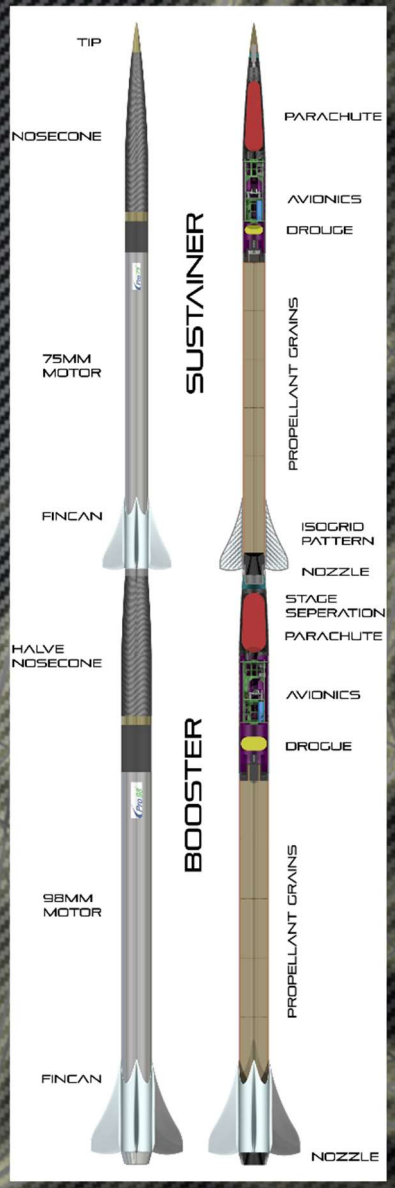
THE HOUND

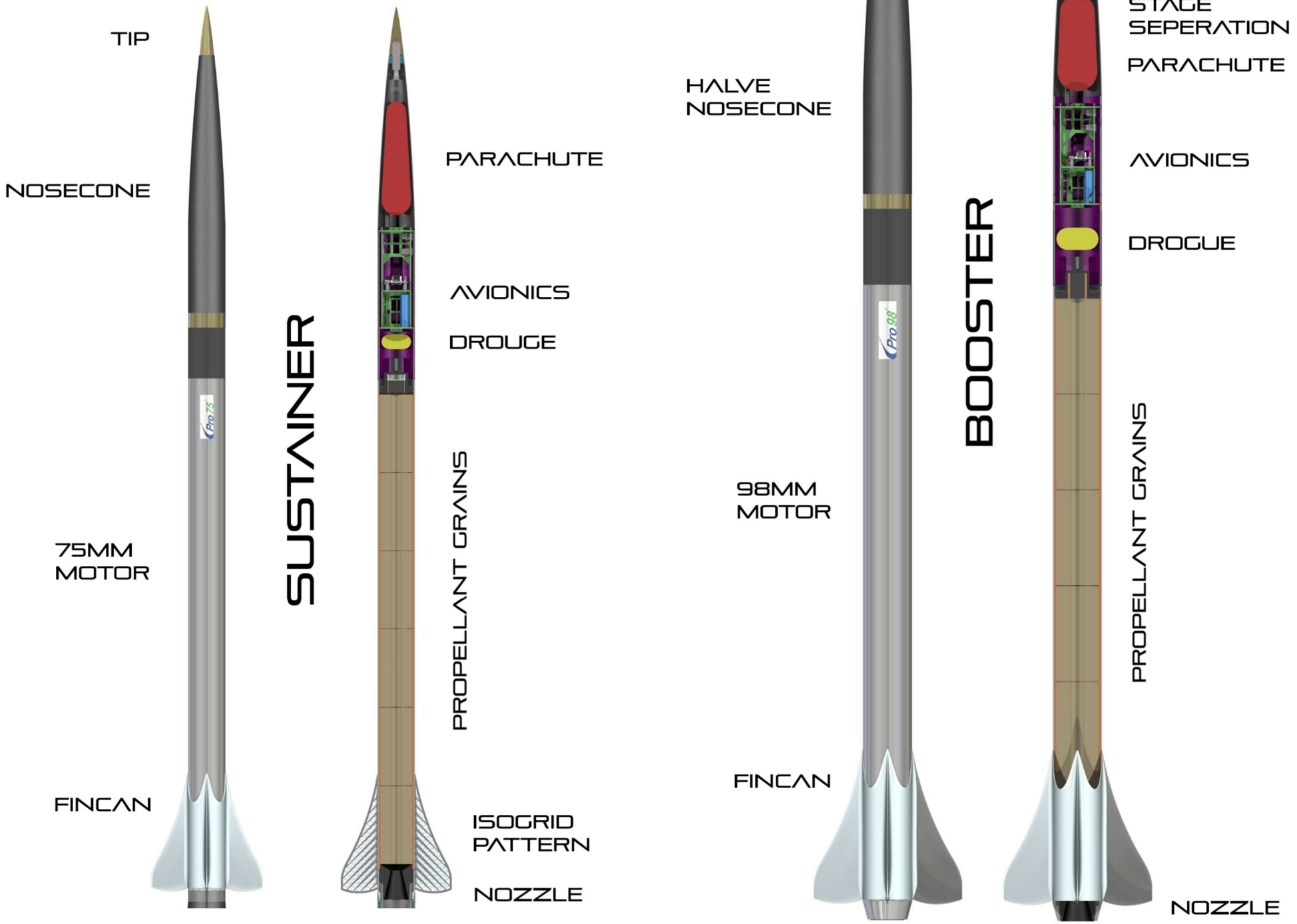
OVERALL:
- Mass: 30 kg
- Lenght: 400 cm

SUSTAINER:
- Mass: 10 kg
- Length: 200 cm
- Diameter: 7.7 cm

BOOSTER:
- Mass: 20 kg
- Length: 200 cm
- Diameter: 10 cm

(approximate values)




TIP
NOSECONE
75MM
MOTOR
FINCAN
SUSTAINER
PARACHUTE
AVIONICS
DROUGE
PROPELLANT GRAINS
ISOGRID
PATTERN
NOZZLE
HALVE
NOSECONE
98MM
MOTOR
FINCAN
BOOSTER
STAGE
SEPERATION
PARACHUTE
AVIONICS
DROGUE
PROPELLANT GRAINS
NOZZLE

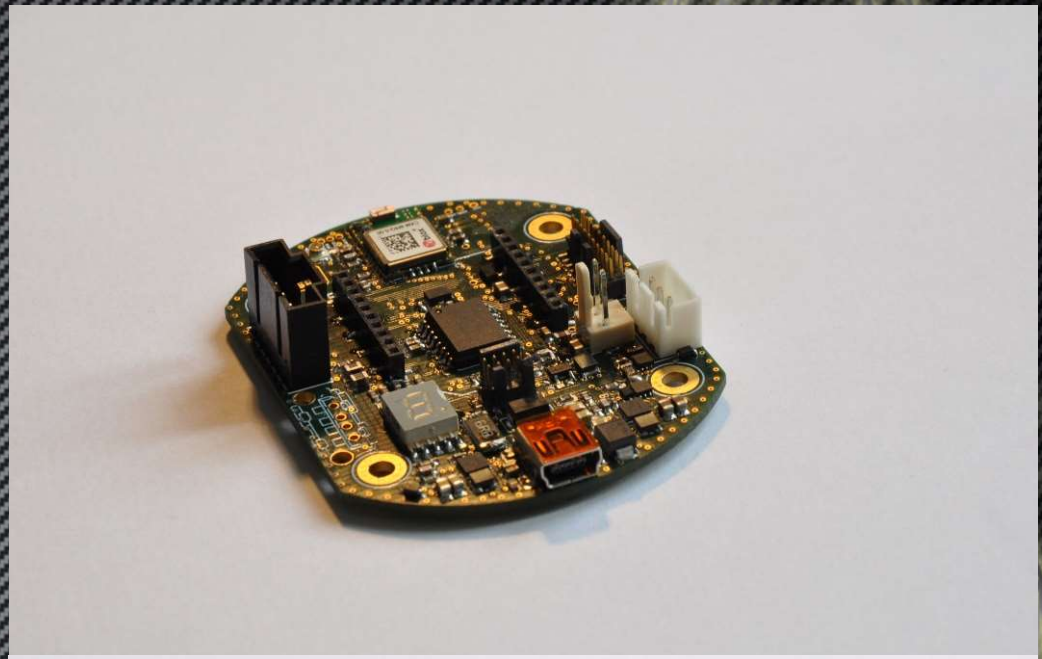
FMS 3.2 -ELECTRONICS

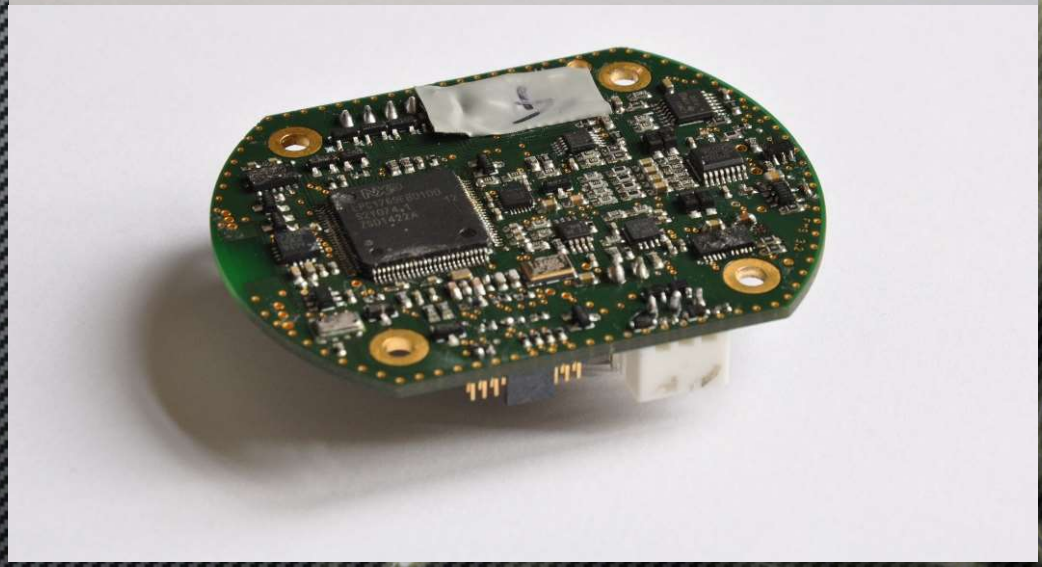
TASKS:

- Telemetry
- Attitude Monitoring
- Sustainer-Ignition
- Recovery
- Measurements

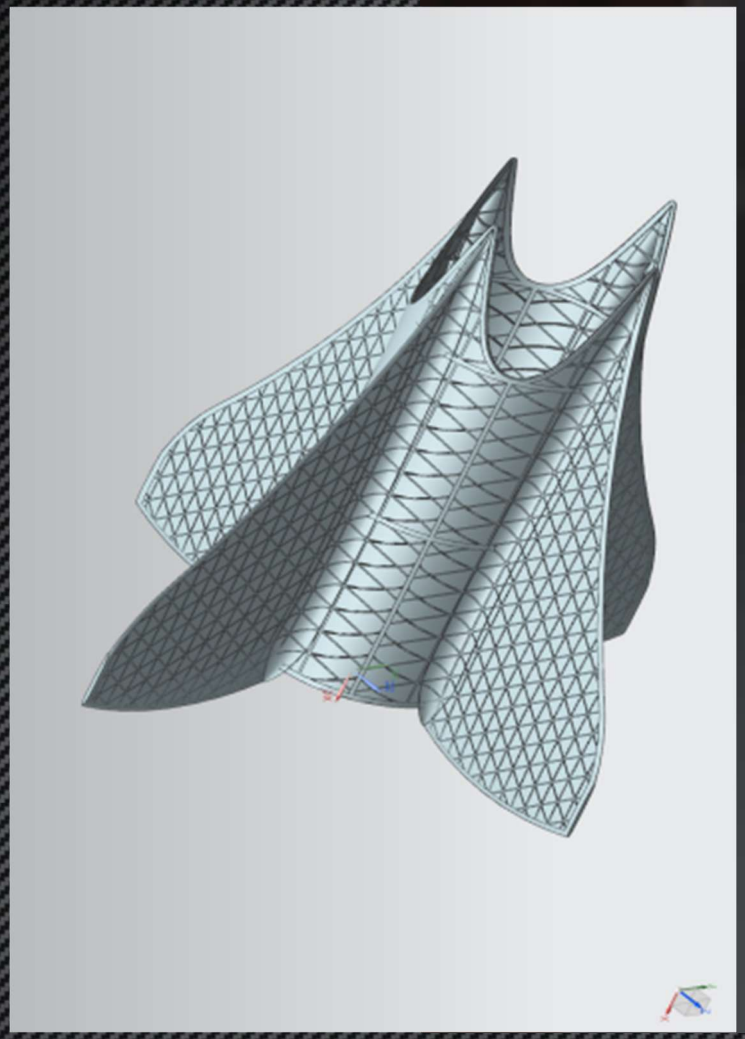
PARAMETERS:

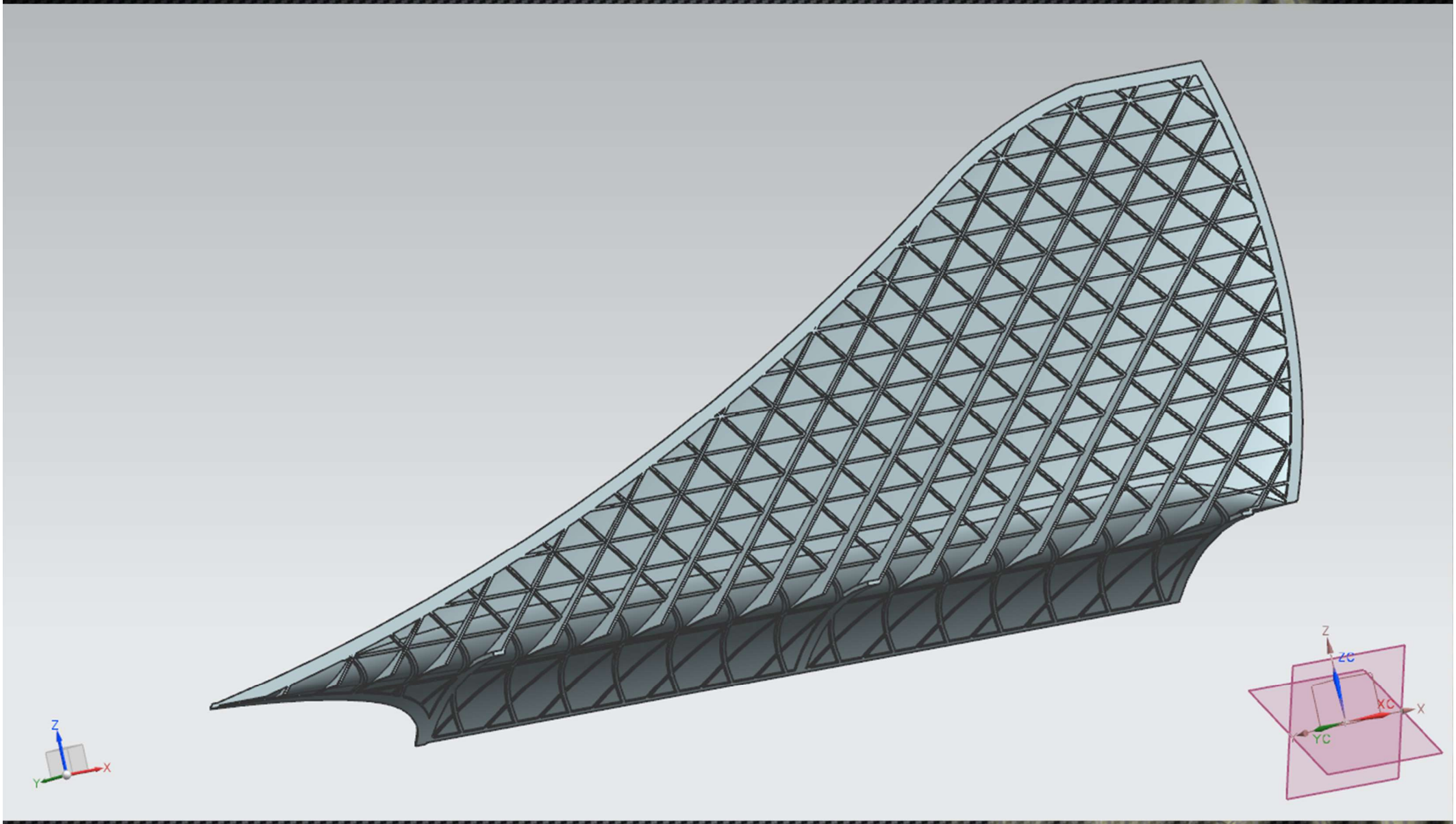
- 5 x 6 cm
- 3-Axis:
  - Gyrometer
  - Magnetometer
  - Accelerometer
- Pressure-Sensor
- Temperature-Sensor
- GPS





DMLS - FINCAN



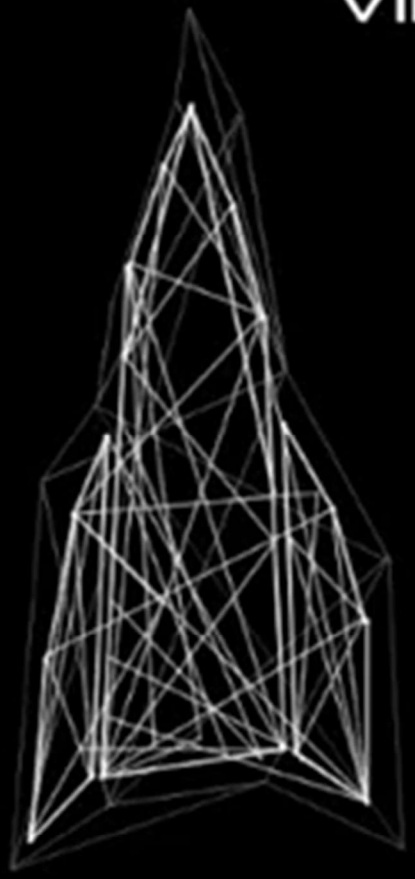

Z
X
Y
Z
ZC
XC
X
YC


DLR
TU WIEN
SPACE
TEAM


KVT
AMARI
HellermannTyton
SILTEX
STR-04
STRIVE
ACIN
PEAK

VIENNA UNIVERSITY OF TECHNOLOGY

SPACE TEAM



STR-03 BLACK BIRD

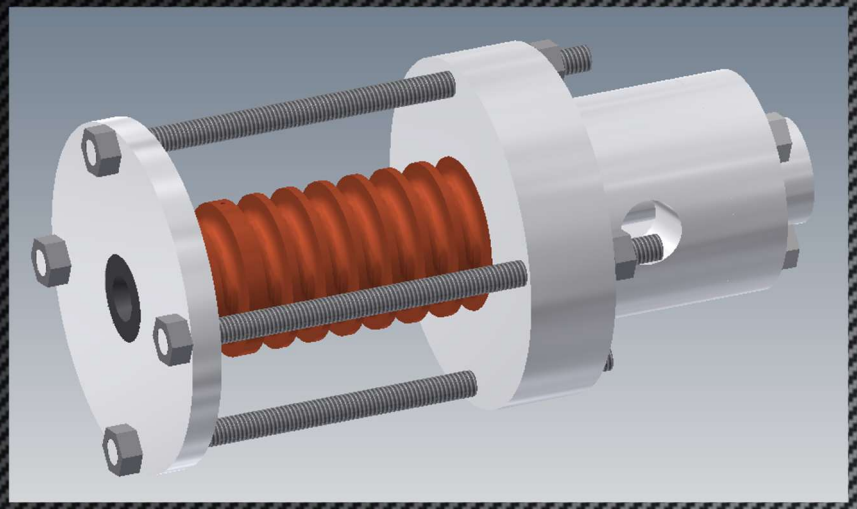
LAUNCH

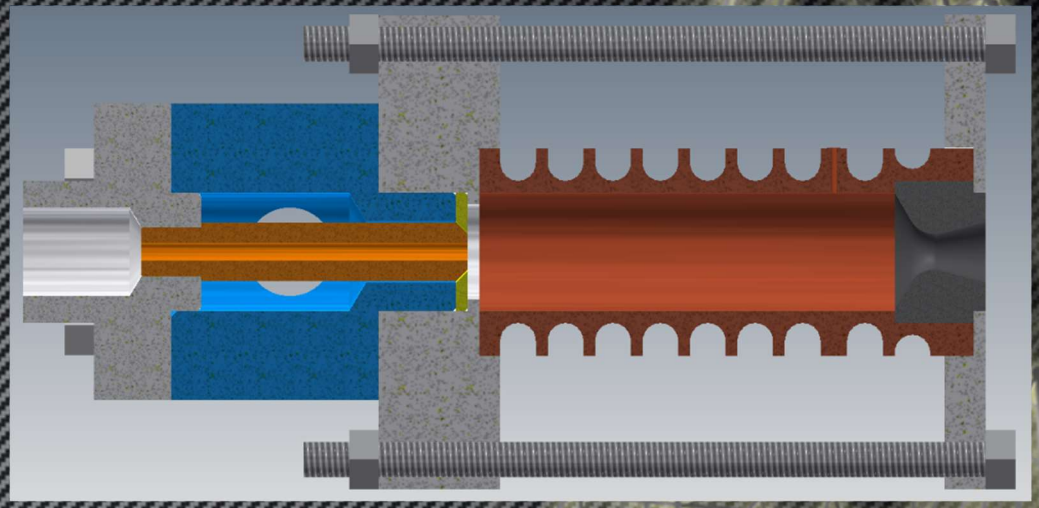
28.08.2013

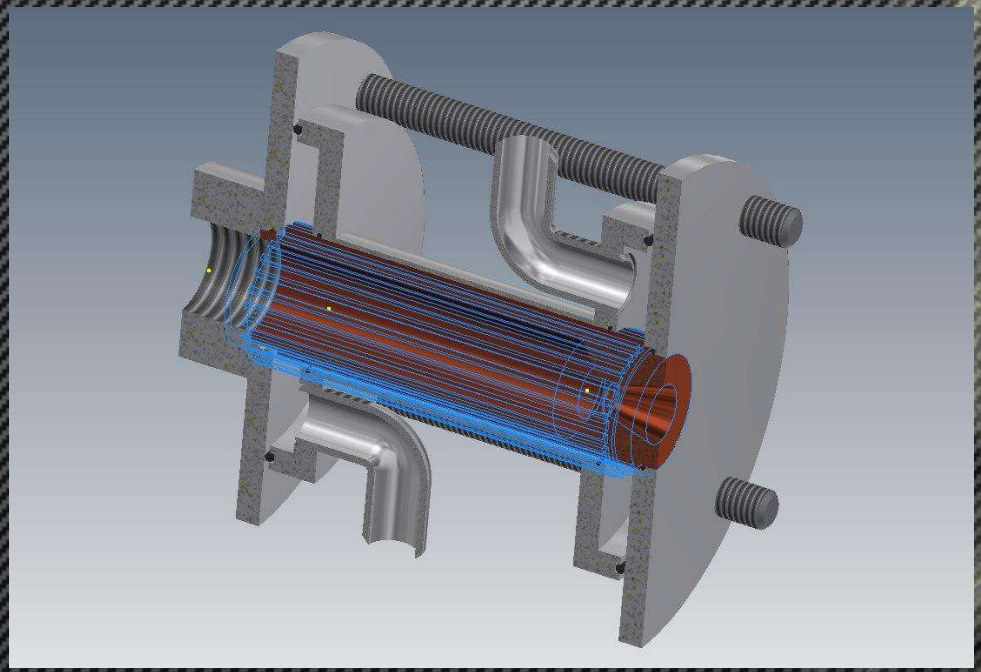
WWW.SPACETEAM.AT

2013

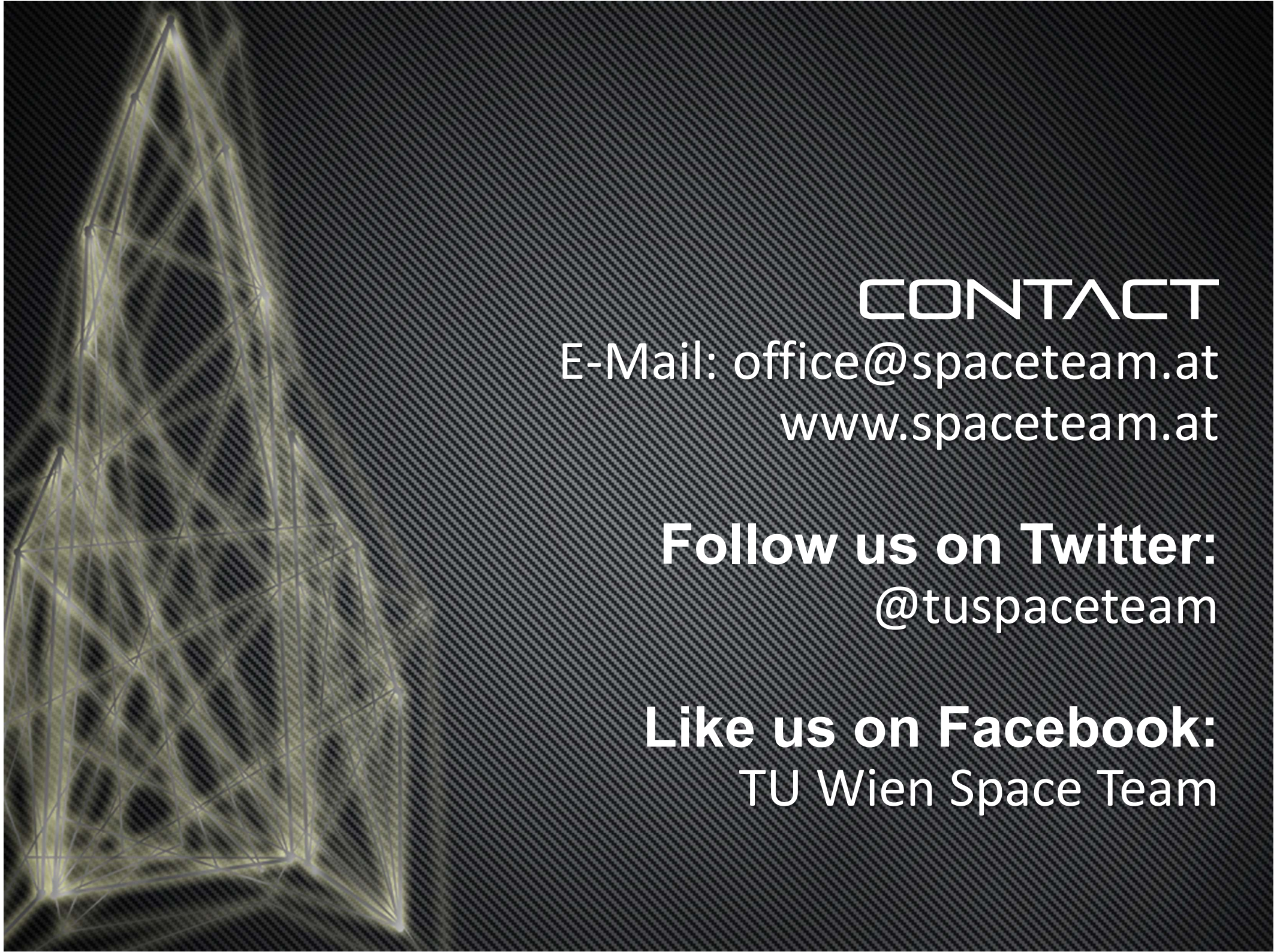
PROJECT THOR







THANKS TO OUR PARTNERS



CONTACT

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