



# Ultra-Precise Metal Optics for Optical Space Communication

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# The Company

## SPACEOPTIX – Space for Vision

- Founded 2020 as spin-off from Fraunhofer IOF, Jena, Germany
- Transfer of 20 years applied research into industry
- Technology leader for industrial development of metallic mirrors and mirror systems
- Focus on high-end optical systems for space, science and industry



# The Technology

## Ultra-precise metal optics

- Unique process chain for the production of ultra-precise aluminum-based metal mirrors
- Complex optical function at reasonable costs
- Efficient technology enables series production
- Space qualified

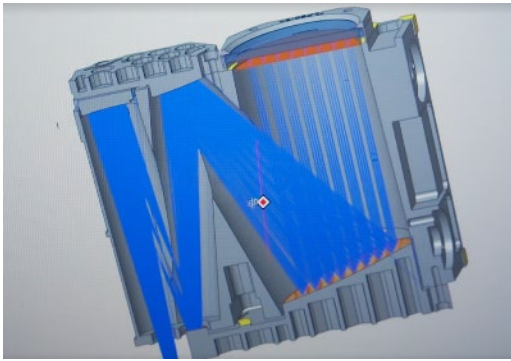


# Portfolio



## Design and manufacturing capabilities

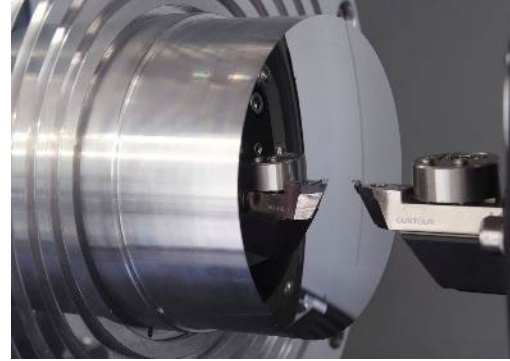
Opto-mechanical  
design



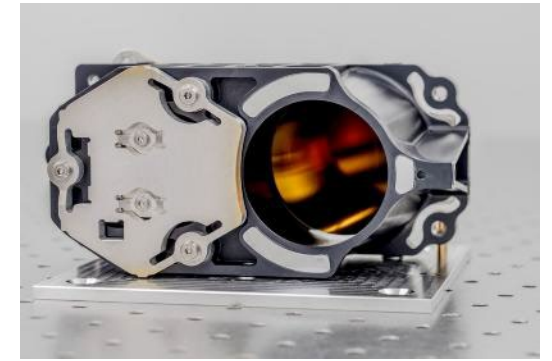
Mechanics  
production



Optics  
production



System assembly  
and test



- Materials: Al, AlSi, AlSiC, NiP, Cu, Ge, Si, PMMA, Zeonex, ...
- Dimensions: Ø 500 mm max.
- Geometry: Plano, sphere, asphere, freeform
- Quality: Down to  $<\lambda/20$  (form),  $< 0.3$  nm Sq (roughness)

# Applications

## Optical Mirrors and Mirror Systems



### Laser Communication



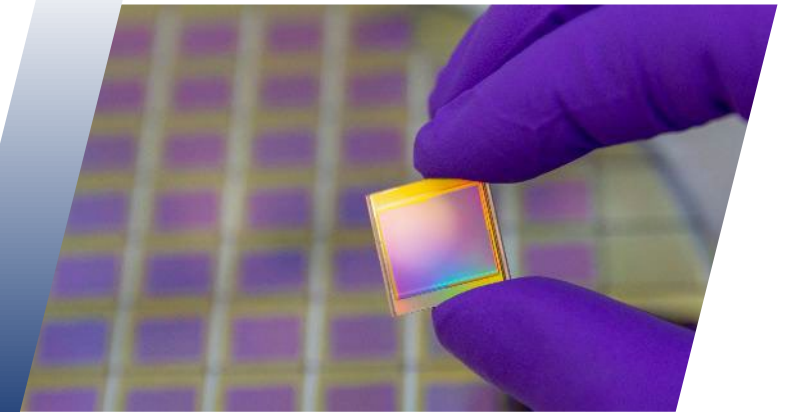
- Telescope and scan mirrors for Laser Communication Terminals

### Earth Observation



- Telescopes
- Camera Optics
- Spectrometer

### Semiconductor



- Ultra-polished substrates
- Illumination optics

# Company Profile

## SPACEOPTIX

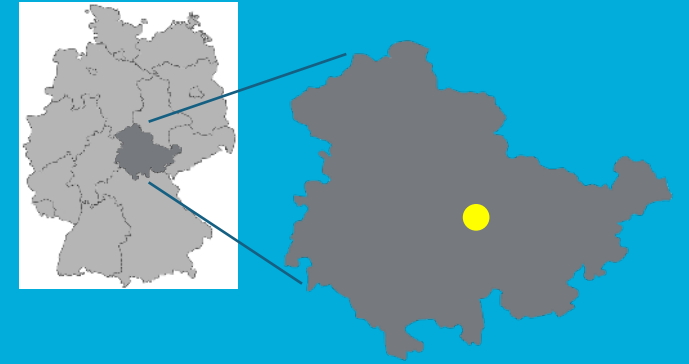
- Founded: 03/2020
- Structure: 100% owner-managed
- Markets: Space, Science, Semiconductor
- Staff: 40 ↑
- Turnover: 8 Mio. € ↑
- Products: Optical Mirrors, Mirror Systems



# Key Facts

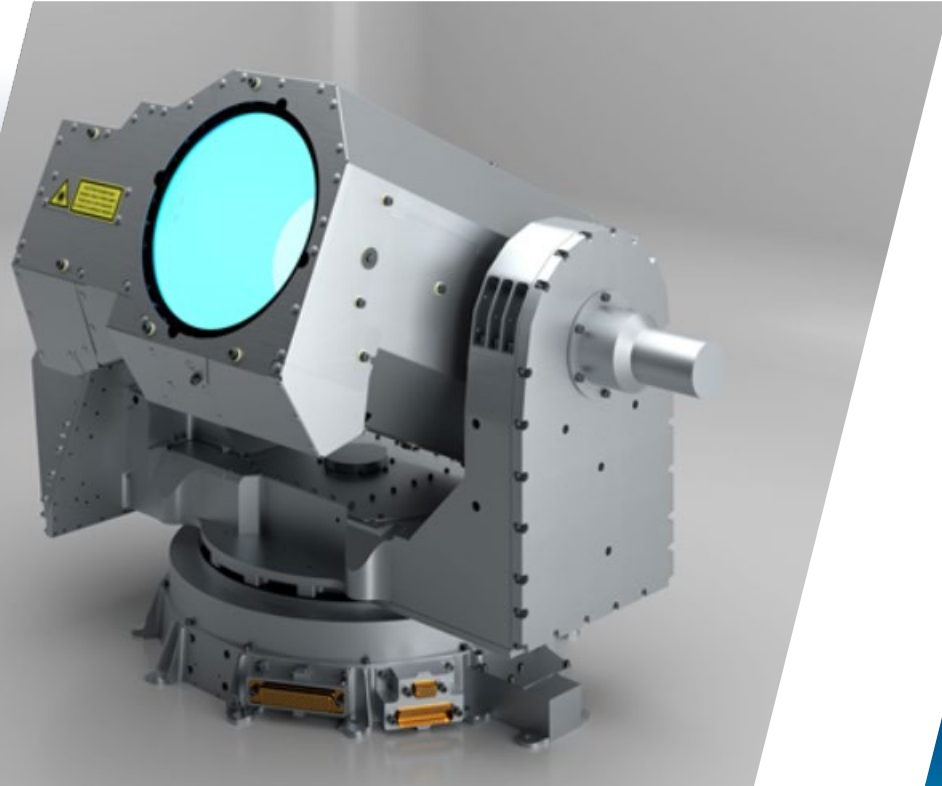
## SPACEOPTIX premises

- Manufacturing site at Grammetal, Thuringia, 3.100 m<sup>2</sup> office and shop floor
- DIN ISO9001 certified
- Prototyping to volume production of ultra-precise metallic optics
- Manufacturing statistics for metal mirrors
  - 2024: ~ 5.000 mirrors
  - 2025: ~ 15.000 mirrors
  - 2026: ~ 20.000 mirrors

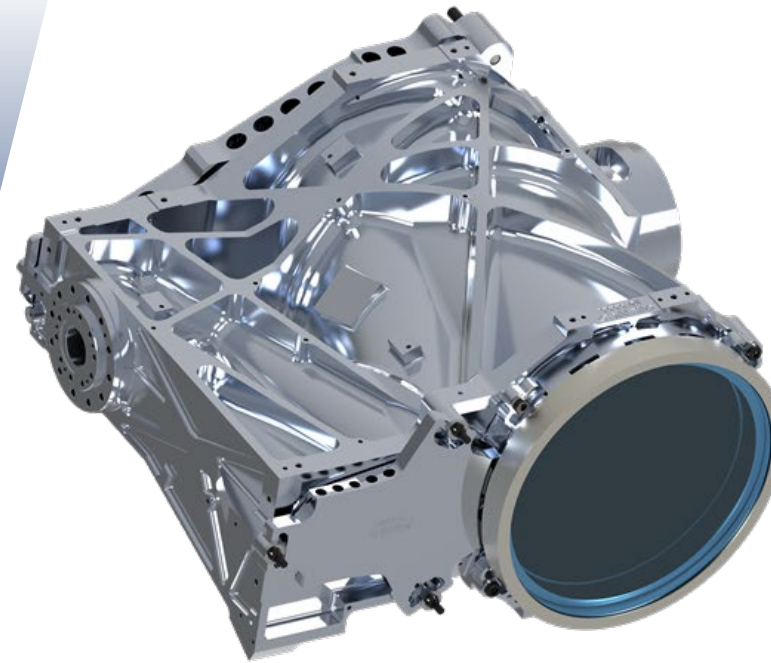


# Space to Space Communication

## SCOT135 Laser Communication Terminal



*SCOT135 Laser communication terminal*



*Freeform telescope with filter*

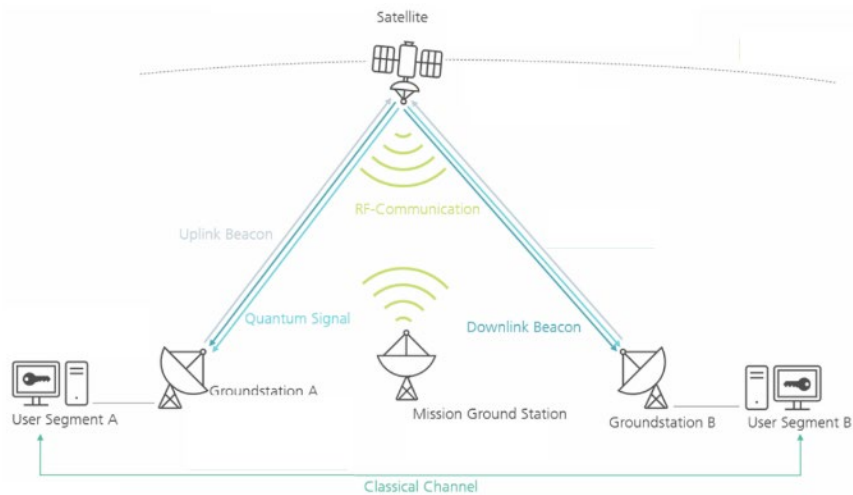


**First FM delivery  
@Tesat, 30.03.2026**

# Space to Earth Communication

## CubEnik Double Telescope for QKD

Double downlink QKD from LEO (700km)  
to two Groundstations (distance 300km)

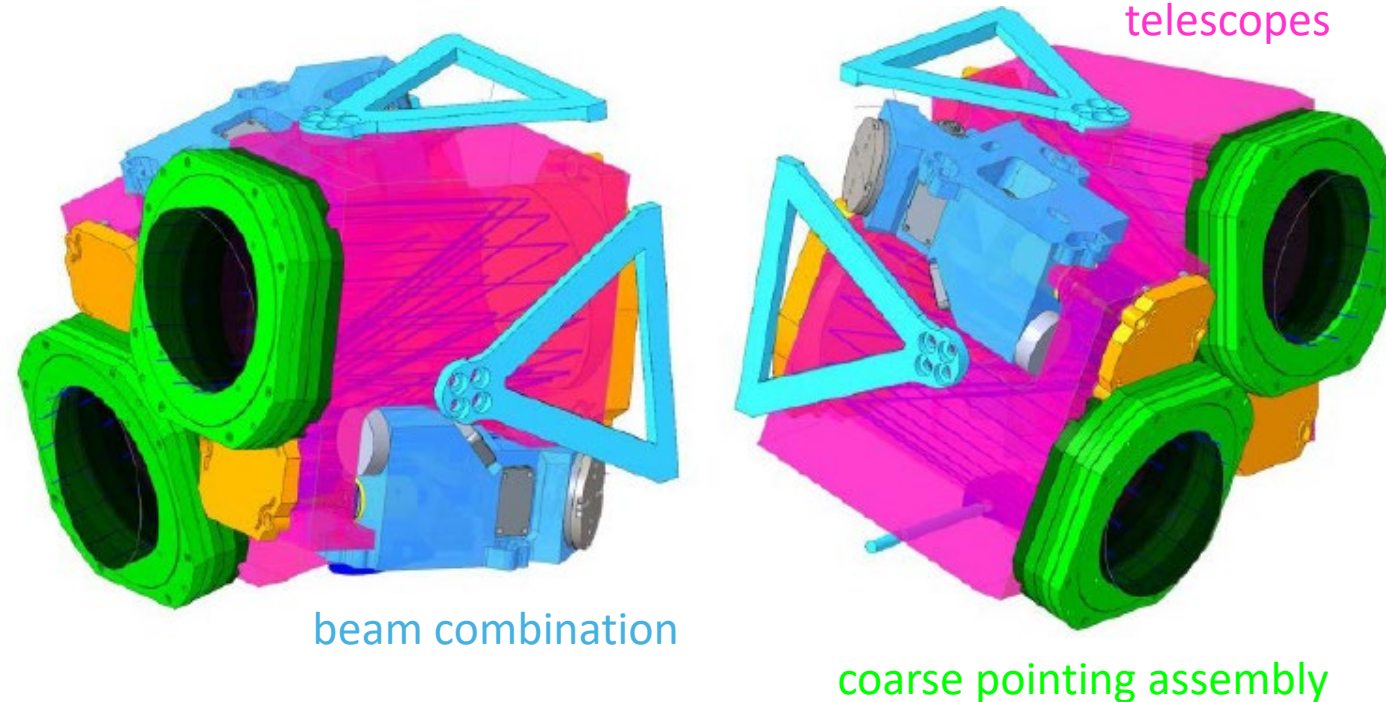


Gefördert durch:



aufgrund eines Beschlusses  
des Deutschen Bundestages

<https://doi.org/10.1117/12.3044303>



Two 80mm aperture  
telescopes for 12U Cubesat

# EPIC Questions

## What can we do for you?

- Manufacturing of ultra-precise mirrors and mirror systems for operation in space and on-ground (mirror dia. up to 500 mm)
- Co-engineering of payloads and optical systems

## What can you do for us?

- Partnership for joint R&D activities for next-generation optical communication systems



ANY QUESTIONS?

# Thank you for your attention!

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