

The logo for Cailabs features the word "cailabs" in a bold, lowercase, sans-serif font. The text is white and is set against a dark background. A vibrant, glowing light effect surrounds the text, transitioning from a bright cyan at the top to a deep purple at the bottom, creating a lens flare or bokeh effect.

**cailabs**

SHAPING THE LIGHT

# Improve reliability of laser communication

EPIC online technology meeting on Photonics for  
New Space

8th May 2020

**David ALLIOUX – Product Line Manager**

david.allieux@Cailabs.com

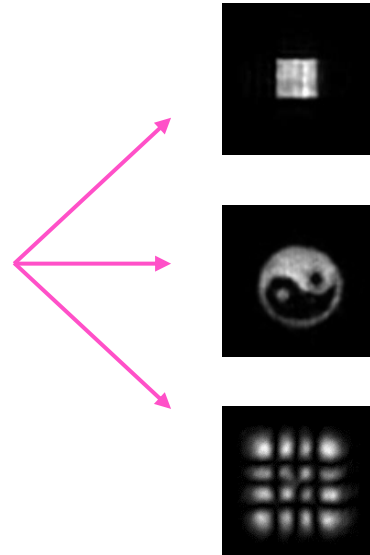
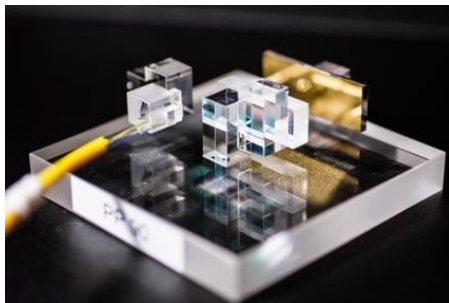


# What do we do?

## Passive optical beam shaping for lasercom & more

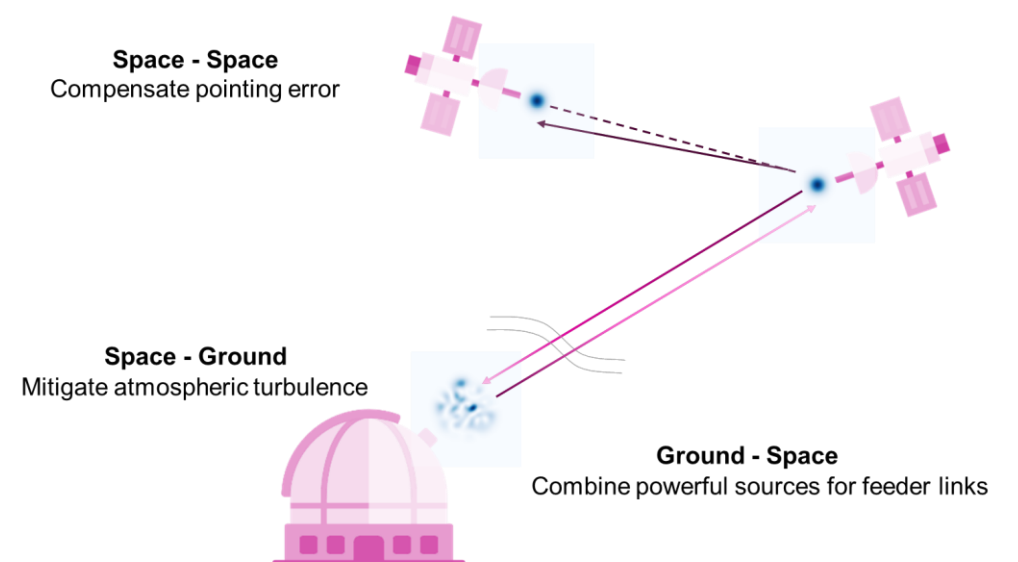
**MPLC** is a unique technology

- Enabling **complex optical beam shaping**
- With a **passive and standard** component
- And **state of the art performances**



That improves **lasercom** link

- At the reception
- At the emission



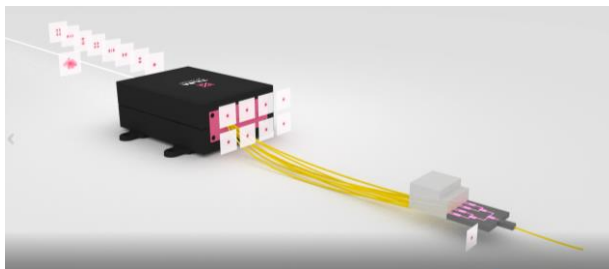
# What do we offer?

## Improve Lasercom reliability with standard components



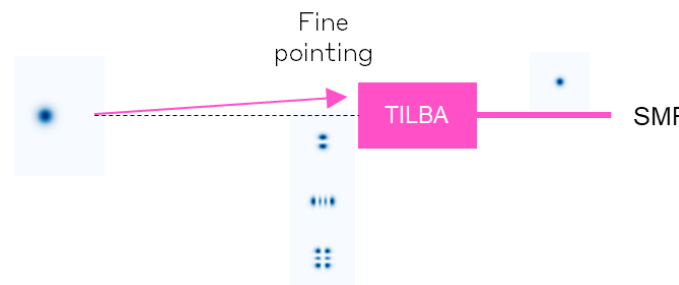
### Turbulence mitigation

- Passive turbulence mitigation
- Standard, plug and play component
- Easy to integrate



### Pointing error compensation

- $>250 \mu\text{rad}$  fine pointing
- Passive collection
- Standard component, possibility for embedded



### Beam combining

- Optimum beam combining
- High power handling (kW)
- Large number of sources ( $>10$ )



# What do we need?

## New partners, new challenges, and new suppliers



### New challenges:

- **Ground station integrators** who have **specific lasercom limitations** and need solutions
- **Satellite integrators** who are interested in **beam steering** or **pointing error compensation**
- **Top tier industrials** who have a **clear ambitious roadmap** willing to collaborate

### New partners:

- **Researchers** who wish new **pre-compensation technique**
- **Ground station manufacturers** who wish **AO-free turbulence mitigation**
- **Anyone** who is interested in QKD with **OAM**

### New suppliers:

- **Manufacturers** with very high tolerance **fiber ribbons and fiber arrays**
- **Providers** with **back illuminated photodiode arrays**



**Thank you for your attention**

**[david.allieux@cailabs.com](mailto:david.allieux@cailabs.com)**