

Towards the First Satellite Constellation for Global Wildfire Detection

2024-11-20

OroraTech GmbH

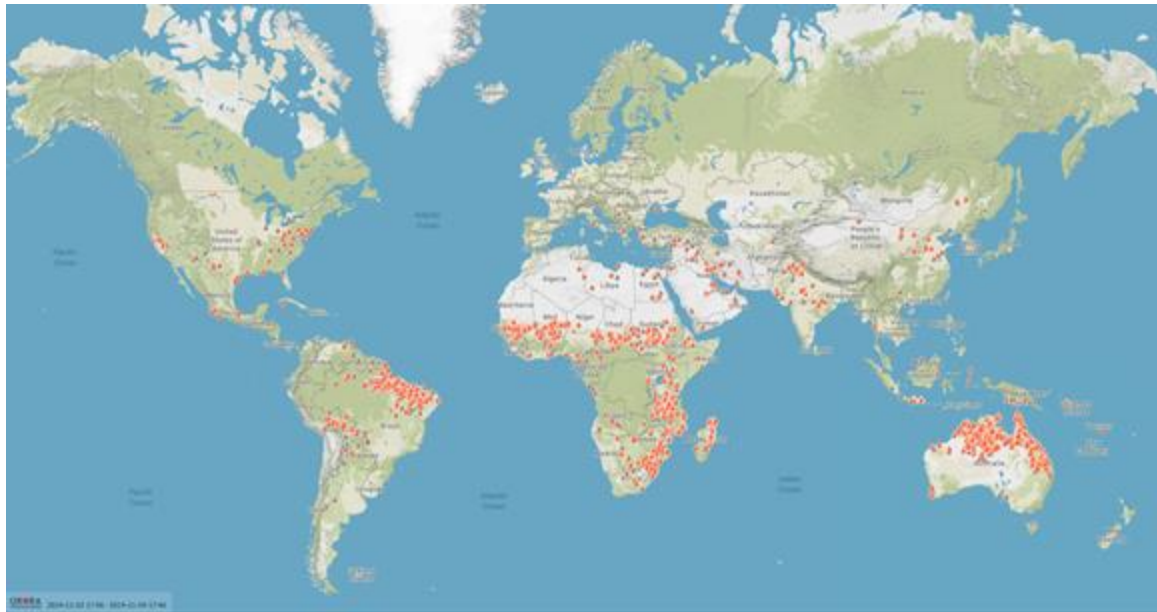


Wildfires





Wildfires: Global Problem



8.000 million tons of CO₂ each year
~10% of global CO₂

Remote wildfires
remain undetected



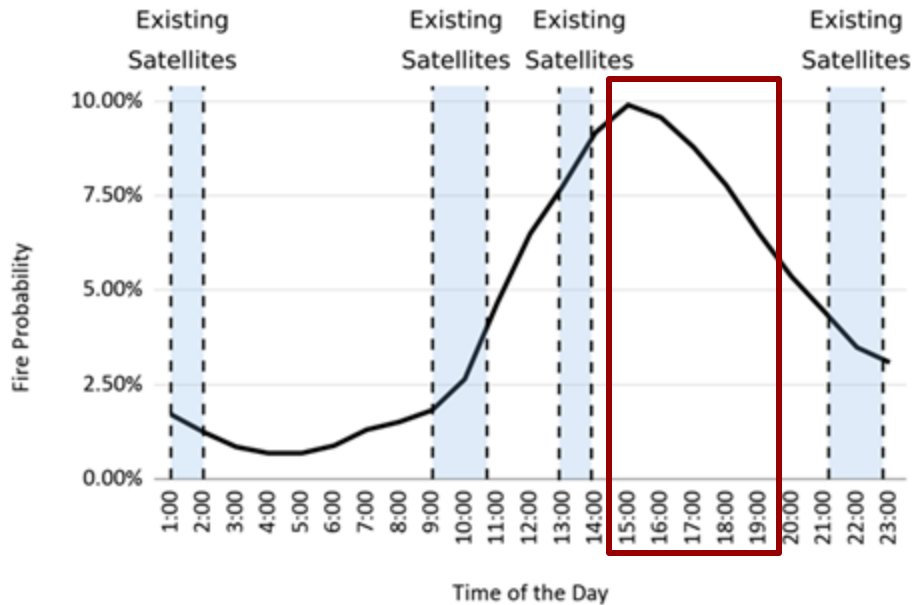
Detect wildfires
earlier!



Using Existing Data

Satellite data from European + other missions

- Fast data evaluation
- Own AI based algorithms

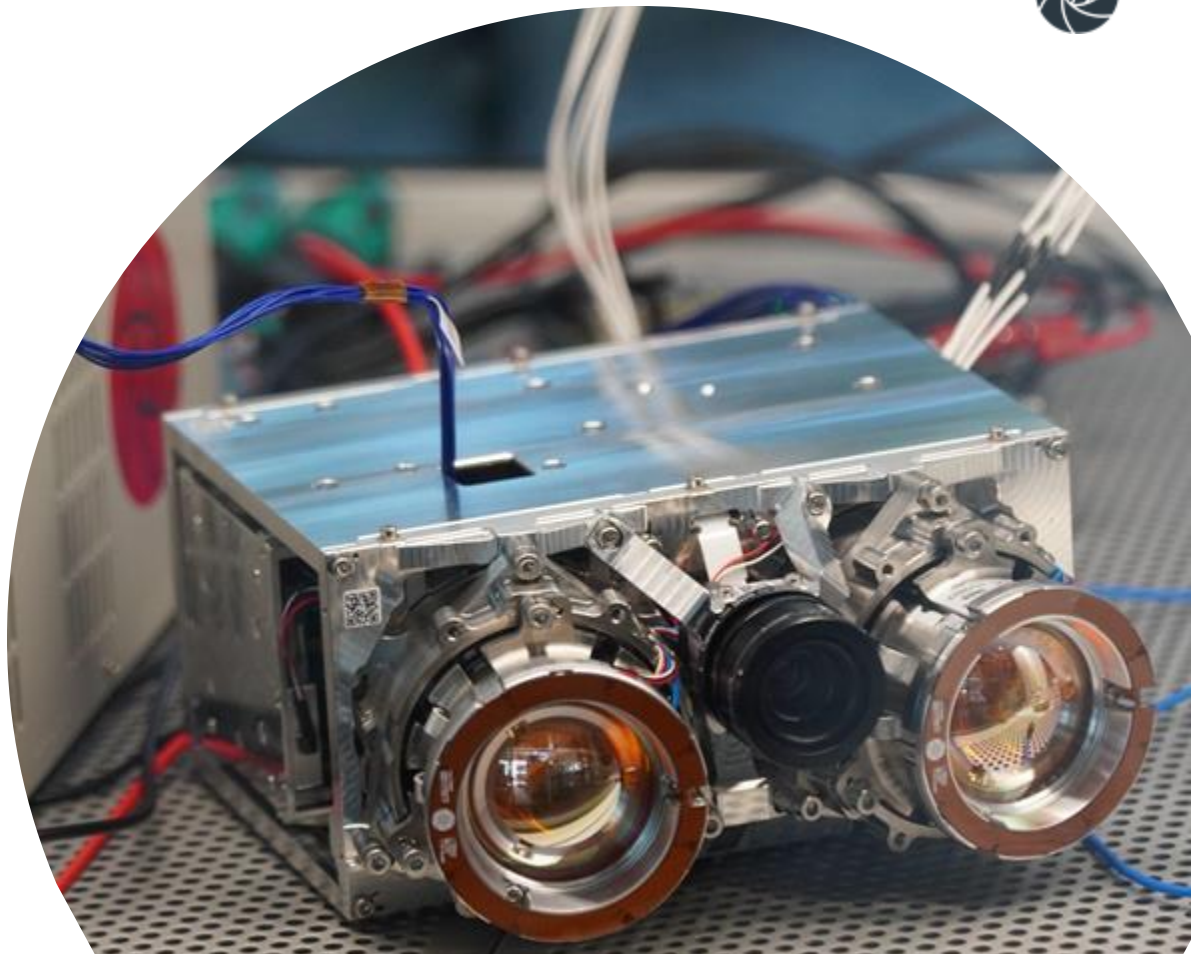


Slow availability +
lack of afternoon coverage



Develop wildfire
constellation!

Wildfire Detection Imager

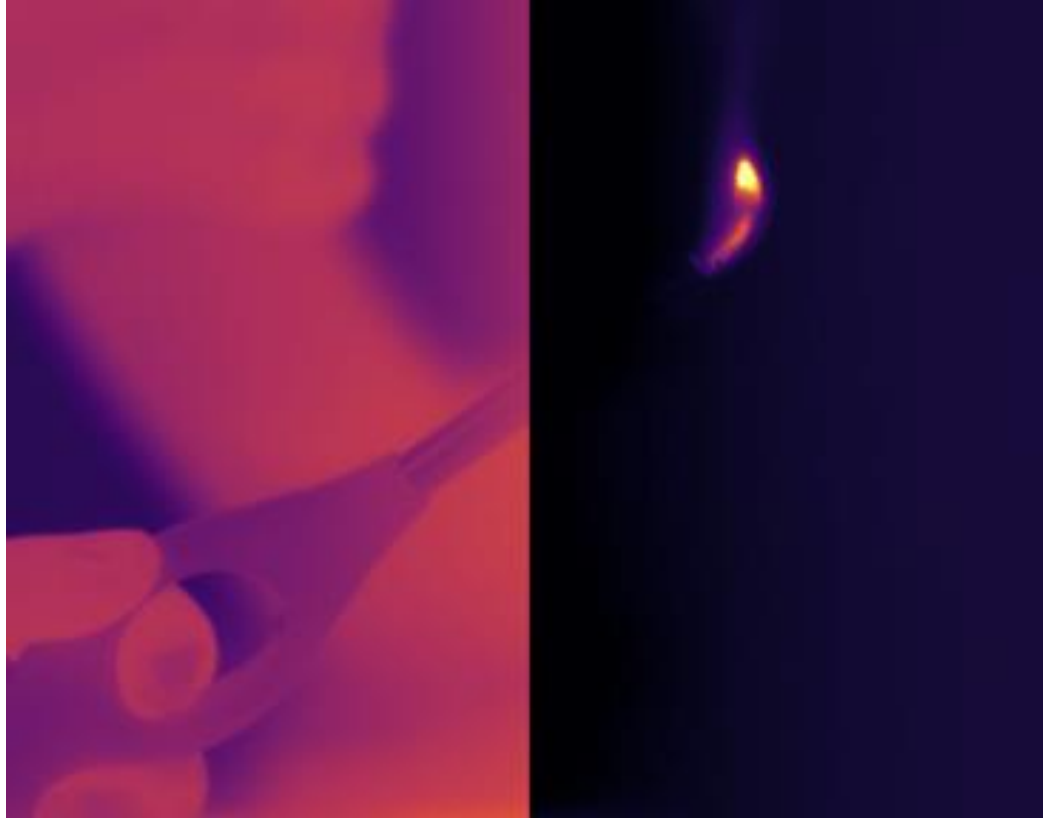




Thermal Infrared

**Long
Wave
Infrared**

**Ambient
Temperature**



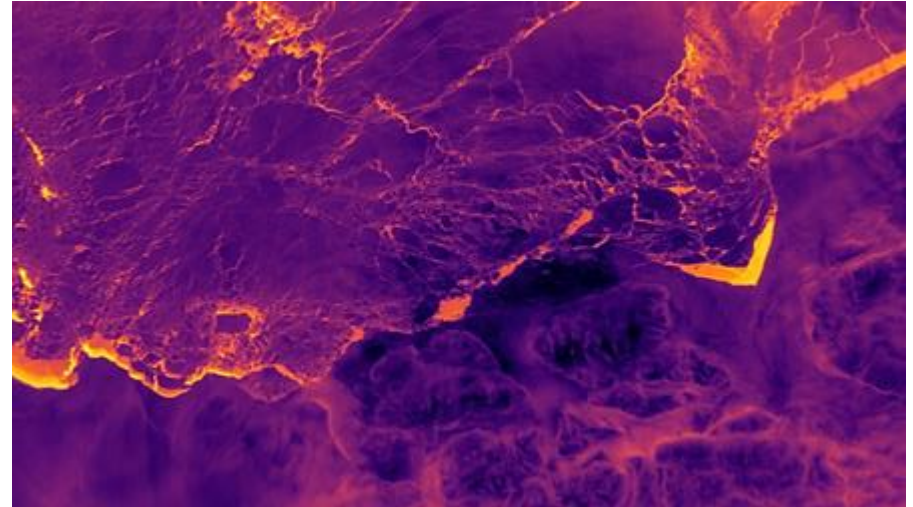
**Mid
Wave
Infrared**

**Extreme
Temperature**

TIR Camera Development

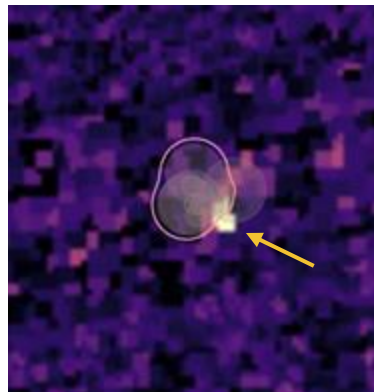


First Multi-Band TIR Camera



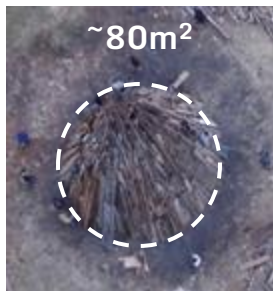
TIR Image of antarctica

Fire Detection Demonstration



<- Mid-Wave-IR
Image

Fire Detected 



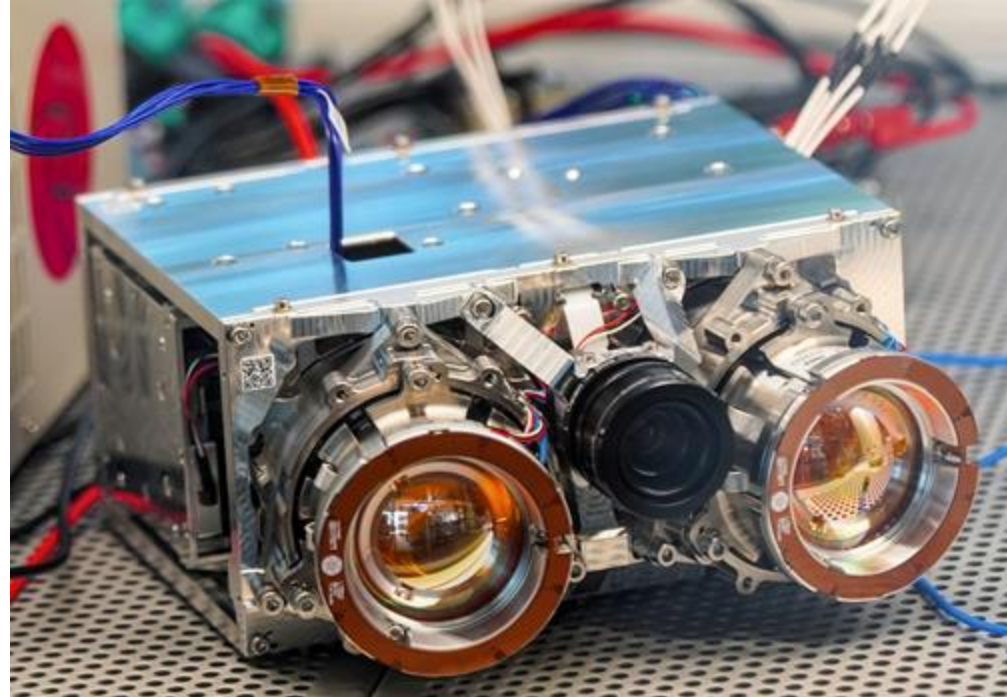
More Information:

- Location: Weigenheim, Germany
- Time: 2023-06-24 20:52 UTC

Current Wildfire Detection Camera



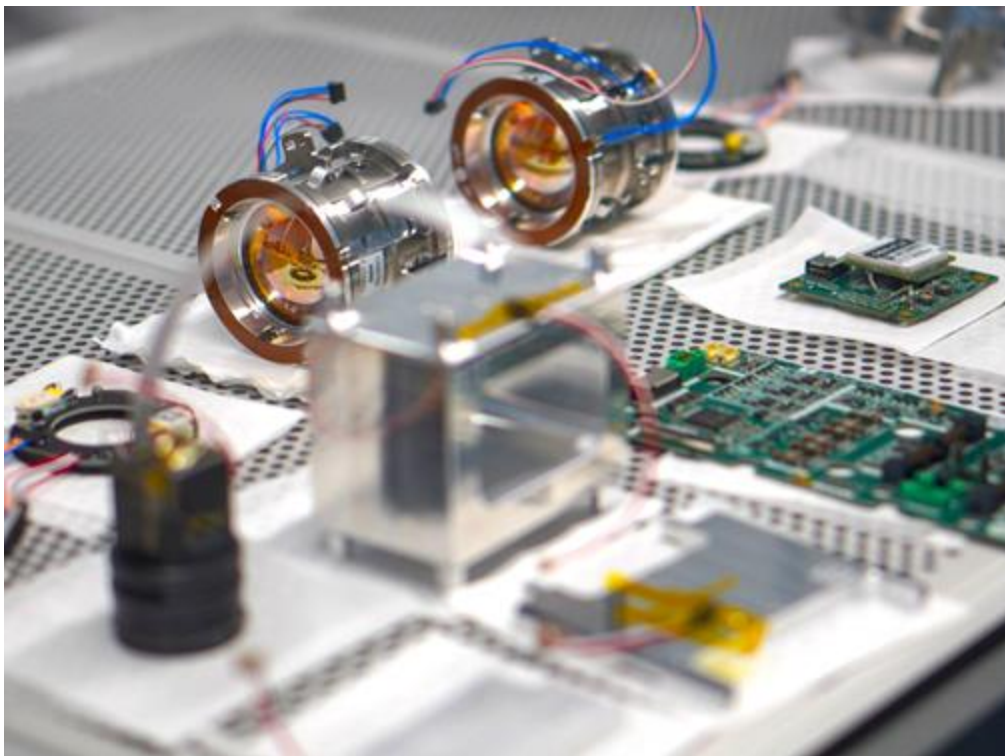
- Upgraded camera system
 - 2 IR cameras and 1 RGB camera
 - 2xLWIR & 1xMWIR filter on IR cameras
- On-board image processing
- Near real-time data transmission



Wildfire Detection Constellation



Small Series Production

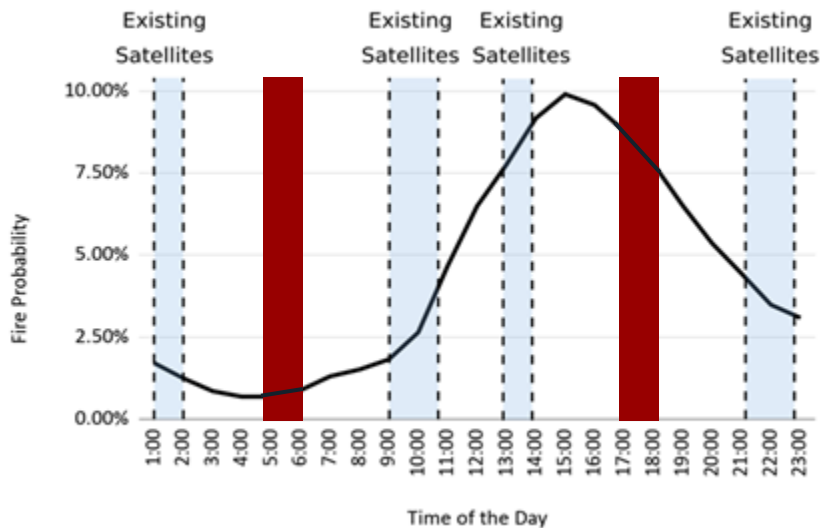




Launch of First Constellation

Early 2025

**World's First Wildfire
Detection Constellation!**



Thank You!

Time for Questions

