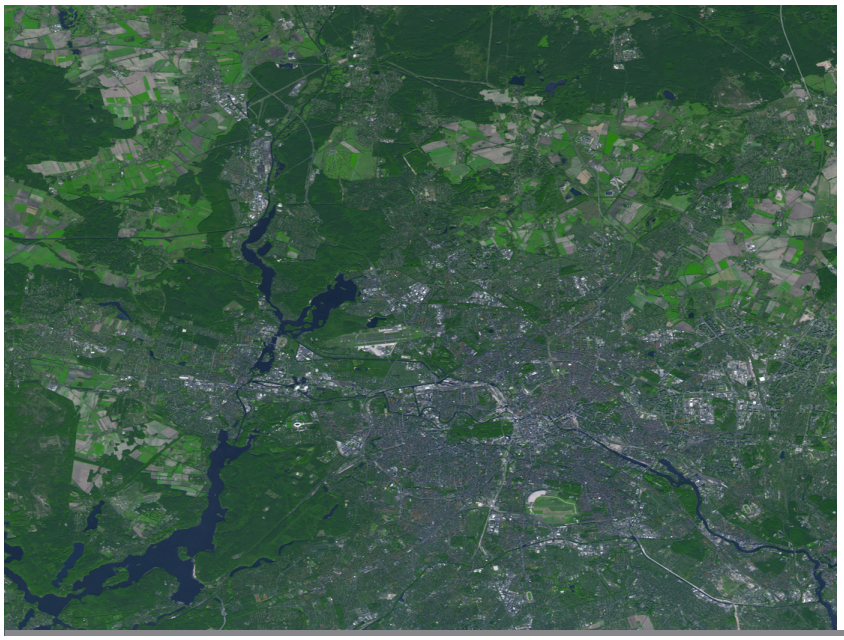

National Aeronautics and Space Administration

TECHNOLOGY SOLUTION

Environment

CubeSat Compatible High Resolution Thermal Infrared Imager

A small, adaptable, and stable high resolution thermal imaging system that provides more detailed spatial and temporal data from orbit.

The CubeSat Compatible High Resolution Thermal Infrared Imager is a technology with multiple applications. It can be flown on an aircraft, deployed on the International Space Station, launched on a ride-share as an entirely self-contained 3U CubeSat, flown on a small satellite, or be a co-manifested satellite instrument.

BENEFITS

- High quantum efficiency
- Broad spectral response
- Ease of fabrication
- Smallest and most compact, easily deployable scientific near/long wave infrared imager
- Easily configured for a Space Station facility instrument as a supplemental IR camera system

THE TECHNOLOGY

This dual band infrared imaging system is capable of spatial resolution of 60 m from orbit and earth observing expected NEDT less than 0.2o C. It is designed to fit within the top two-thirds of a 3U CubeSat envelope, installed on the International Space Station, or deployed on other orbiting or airborne platforms. This infrared imaging system will utilize a newly conceived strained-layer superlattice GaSb/InAs broadband detector array cooled to 60 K by a miniature mechanical cryocooler. The camera is controlled by a sensor chip assembly consisting of a newly developed 25 m pitch, 640 x 512 pixel.

APPLICATIONS

The technology has several potential applications:

- Environmental monitoring
- Space flight
- Meteorology

PUBLICATIONS

Patent No: 10306155

technology.nasa.gov

NASA's Technology Transfer Program pursues the widest possible applications of agency technology to benefit US citizens. Through partnerships and licensing agreements with industry, the program ensures that NASA's investments in pioneering research find secondary uses that benefit the economy, create jobs, and improve quality of life.

GSC-17113-1, GSC-TOPS-138

More Information

National Aeronautics and Space Administration

Agency Licensing Concierge

Goddard Space Flight Center

Code 102
Greenbelt, MD 20771
202-358-7432
Agency-Patent-Licensing@mail.nasa.gov

www.nasa.gov

NP-2015-04-1730-HQ