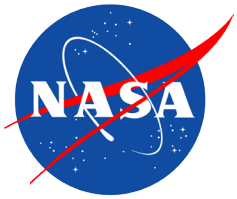

wavefront sensing markets and applications

Advanced Cameras and Optics

Description

The Goddard Space Flight Center has developed a wealth of wavefront sensing technologies, algorithms, optical components and design, test and simulation tools useful in a wide range of video surveillance applications. These technologies have been utilized on a number of NASA missions and development programs including the James Webb Space Telescope (JWST). Although originally designed for use in space-based adaptive optics applications, these technologies are highly applicable to the documented needs for improved long range observation systems by providing enhanced wavefront sensing algorithms, components and tools to better account for environmental or optical disturbances to greatly improve image resolution.

Markets & Applications

Warfighter Intelligence Surveillance & Reconnaissance

- Naval Optical Systems
- Advanced Ground to Ground Optics (i.e. binoculars, sniper scopes)
- Space-based Optical Platforms
- Optical Payloads for Manned and Unmanned Aerial Platforms

Homeland Security

- Optical Surveillance Systems for Sensitive Facilities
- Border Security
- Port Security
- Coastal Surveillance

wavefront sensing markets and applications

GSFC Technologies Available for License

Wavefront Detection Algorithms:

- **GSC-14900-1**, Filter Function For Wavefront Sensing & Control Over An Extended Field Of View
- **GSC-15208-1**, Direct Solve Image Based Wavefront Sensing
- **GSC-15464-1**, PseudoDiversity - Direct Wavefront Control and Image Restoration at High Bandwidth
- **GSC-15693-1**, Variable Sampling Mapping
- **GSC-15963-1**, Iterative Transform Phase Diversity

System Operating Software:

- **GSC-14725-1**, Wavefront Sensing And Optical Control Software (WSOC)
- **GSC-15399-1**, James Webb Space Telescope (JWST) Wavefront Sensing Software

Lenses, Gratings & Mirrors:

- **GSC-14901-1**, Fixed Lens Wavefront Sensing
- **GSC-15680-1**, Focusing Diffraction Gratings
- **GSC-16008-1**, Phase Controlled Magnetic Mirror for Wavefront Correction

System Design Simulation & Testing Tools:

- **GSC-15138-1**, Matlab-OSLO Toolkit
- **GSC-15151-1**, Matlab-Zemax Toolkit
- **GSC-15567-1**, Wavefront Control and Optimization Toolbox
- **GSC-15676-1**, Computer Generated Hologram System for Wavefront Measurement System Calibration

For More Information

If you are interested in more information or want to pursue transfer of technologies suited to this market, please contact:

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To view Goddard's entire portfolio of wavefront sensing technologies, please visit:
http://ipp.gsfc.nasa.gov/wavefront