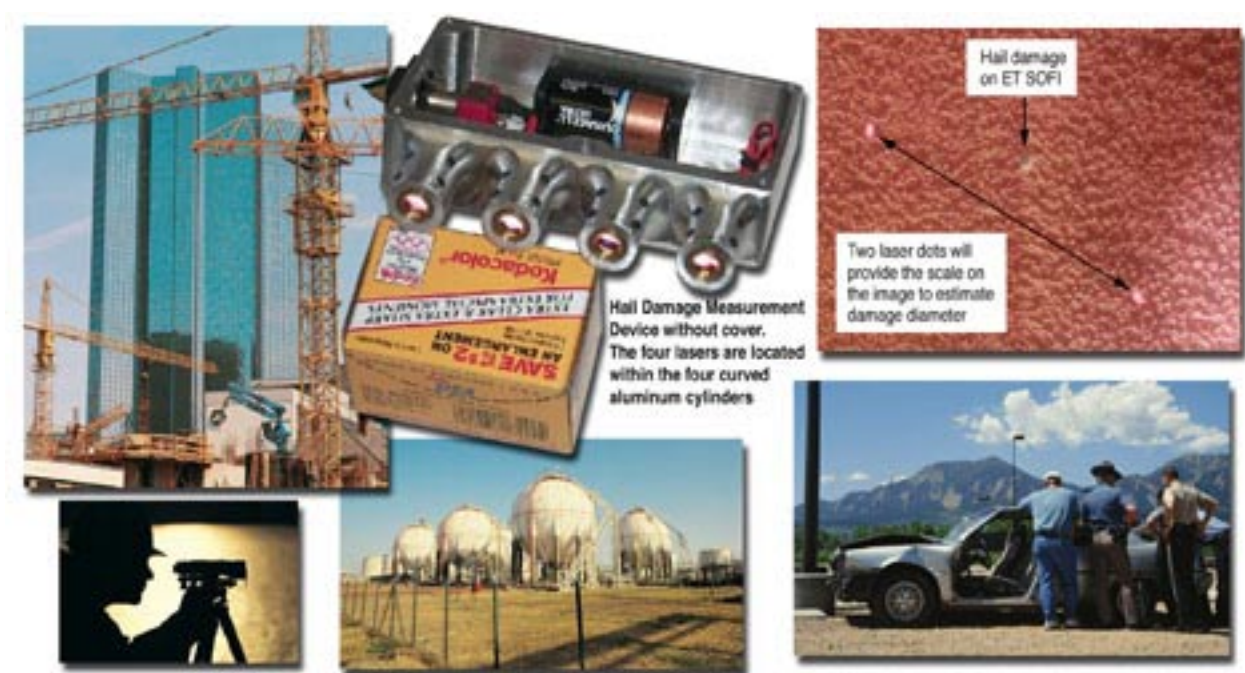


Technology Opportunity

Sensors/Instrumentation

Scaling Device for Photographic Images

The National Aeronautics and Space Administration (NASA) seeks to license the Scaling Device for Photographic Images technology. Developed at the John F. Kennedy Space Center (KSC), FL, this innovation is a tool that attaches directly to a charge-coupled device (CCD) or film camera and projects a known pattern into the field of view of the camera. When a photograph is taken, the image of this pattern appears along with the image of the object under investigation, allowing the viewer to quantify the size of the object. NASA's need for this development was inspired by hailstorm damage to the Space Shuttle's External Tank. Telephoto lenses are used to zoom in and see the damage clearly, yet the end viewer cannot determine the scale of the damage because there is no reference object in the image. In many photographic situations an object, such as a ruler, is placed within the field of view so that when the photo is seen, the viewer will have a visual indication of the scale of the other objects in it. For situations where this procedure is not possible, this innovation supplies a solution.



Potential Commercial Uses

- Oil and chemical tank monitoring
- Construction
- Accident scene investigation

Benefits

- As a simple and inexpensive scaling device, improves upon traditional tape measure and ruler approaches to scaling images
- Provides an inexpensive means for preliminary inspection work to detect corrosion, damage, and reconstruction work for oil and chemical tanks



- With modification to provide distance data, could be useful to law enforcement officers and investigators in accident scenes
- Provides a specialty application in construction site distance, leveling, and surveying tasks

The Technology

In its present state, the scaling tool is a stand-alone device with no image processing software. It consists of four lasers (only two are needed for scaling, the other two are NASA-required backup) that are aligned in a row at a precise and known distance. When the lasers project onto the image at this spacing, they provide a scalable series of spaced reference points in the image. The packaging contains thermally stable mounting pots for the lasers with alignment adjustment screws. Class 3 lasers are used in the preferred design; however, cheaper and less powerful lasers can be used. The device has the potential to be easily modified to provide distance data. Current device attributes include:

- Usable scaling method from ~3 to 80 feet with no focusing elements
- Better than 1 % scaling accuracy
- Four lasers, Class 3A, that are powered by a single 3-volt battery
- Compact device suited for camera mounting
- Scaling accurate at angles up to ± 20 degrees

Options for Commercialization

This technology opportunity is part of the NASA Technology Transfer Program. The program seeks to stimulate development of commercial applications from NASA-developed technology. The technology type was designed and tested and is in use at KSC. NASA seeks qualified companies to license and commercialize this technology.

Contact

If your company is interested in the Scaling Device for Photographic Images technology or if you desire additional information, please reference case no. KSC-12201 and contact:

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Commercialization Checklist

- ✓ Patent Pending
 - U.S. Patent
 - Copyrighted
- ✓ Available to License
 - Available for no-cost transfer
 - Seeking industry partner for further codevelopment