Technology Commercialization Opportunity

Remote Sensing - Airborne Mapping System w/Realtime Data Link

Technology Description

The Wildfire Airborne Sensor Platform (WASP) sensor is a world class airborne imaging and mapping system developed for disaster surveillance and environmental monitoring.

The WASP sensor suite includes four (4) cameras mounted to a common framework. Each camera covers a different portion of the electromagnetic spectrum, allowing users to view a scene in any combination of color (or color-infrared), short wave infrared, midwave infrared and long wave infrared. The cameras provide high spatial resolution, able to resolve objects as small as 4" in color (color-infrared) or 24" in the infrared. Temperature sensitivity in the thermal infrared (mid wave and long wave) is about 0.05 K. The nominal field of view for each camera is about 35 deg providing a ground swath of about 2,000' at an altitude of 3,000' above ground level (AGL).

	Color (RGB or CIR)	Shortwave	Midwave	Longwave
Imager array size	4000 x 4000	640 x 512	640 x 512	640 x 512
Pixel size (microns)	9	25	25	25
Focal length (mm)	55	25	25	25
FOV (deg)	37.5	37	37	37
Resolution at 2,000' AGL	4" (0.1m)	24" (0.6m)	24"(0.6m)	24"(0.6m)
Wavelength range	400 - 900 nm	1100 - 1700 nm	3000 - 5000 nm	8000 - 9200 nm
Temperature Sensitivity		0.05K	0.05K	0.05K

WASP Camera Specifications

WASP employs a unique in-flight thermal calibration capability that allows the thermal infrared cameras (midwave and long wave) to measure scene temperature directly from the imagery within the limits of knowledge about target emissivity and atmospheric effects.

RIT has also developed an integrated data transmission and processing system that enables users to access airborne imagery in near realtime directly from the aircraft.

Keywords: wildfires, disasters, airborne, mapping, imagery, remote sensing

Technology Readiness

WASP is a fully operational Beta prototype having successfully deployed on over 100 flights.

Idea	Concept	Prototype	Alpha Version	**Beta Version**	Released

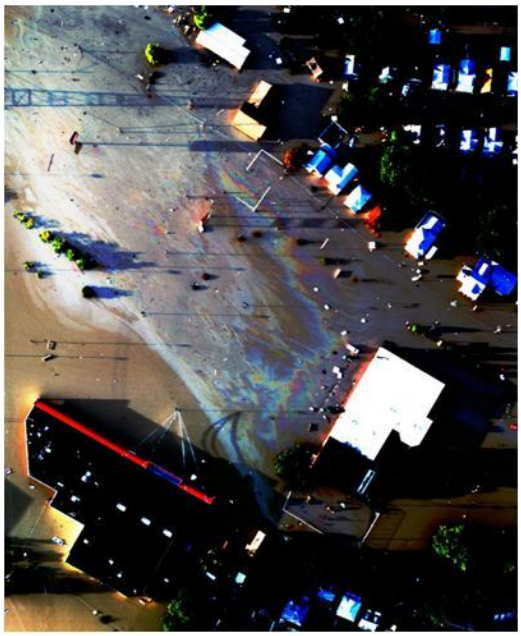
The developers of WASP will work with licensees to finalize the development and move WASP towards a "released version."

Intellectual Property

WASP has been awarded US Patent 8,587,664. RIT has also developed a unique hardware architecture and software solution for enabling robust transmission of imagery data from the aircraft to the ground in realtime.

Applications

WASP has been deployed to image fires, earthquake damage (Haiti), and major floods. Other applications have included stream temperature mapping and pollutant effluent detection. WASP has also been demonstrated as a tool for urban heat loss mapping through thermal imaging of building roof tops at night.



Target Customers

- State and federal disaster response agencies and their contractors
- Commercial and government environmental monitoring entities

Opportunity

RIT's Intellectual Property Management Office (IPMO) is interested in working with those parties who are qualified and interested in the commercialization of the WASP intellectual property. Arrangement types include licensing the application to existing organizations or new organizations that have expertise in the field or related fields.

Contact

Those interested in learning more about this opportunity should contact:

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