

*Empowered by technology*



**INNOVATIVE DYNAMICS INC.**



## COMPANY OVERVIEW

Innovative Dynamics is a research and development firm located in Ithaca, NY. IDI develops intelligent sensor systems for improved aircraft and ground vehicle safety. Our research is supported by laboratories and test facilities that work in advanced materials, electronics, optics, sensors, and signal processing. IDI has developed numerous innovative products as an outgrowth of SBIR research contracts from various government and DoD customers, state-sponsored research, and public companies.

IDI's goal is to work with strategic partners to develop, manufacture and license sensor technologies for commercial and military applications. Current partnering activities include:

- ❖ Deployment of ***IceSight*** sensor products into Road Weather Information Systems through Intelligent Transportation System integrators.
- ❖ Development of a low-cost version called ***FloodWatch*** for commercial and home flood applications.
- ❖ Development and integration of a low power ***Electric Pulse Ice Protection System*** for aircraft and ship applications.
- ❖ Working with OEMs on a ***Fluid Debris Sensor*** to improve gear box performance.
- ❖ Development of a ***Wire Chafing Sensor*** to enable more cost-effective and efficient maintenance of wiring systems.
- ❖ Development of an airborne ***Cloud Assessment System*** to provide real-time data about the characteristics of clouds. This data will be extremely useful to the aircraft industry for planning safe routes through areas of potential icing or volcanic ash clouds.

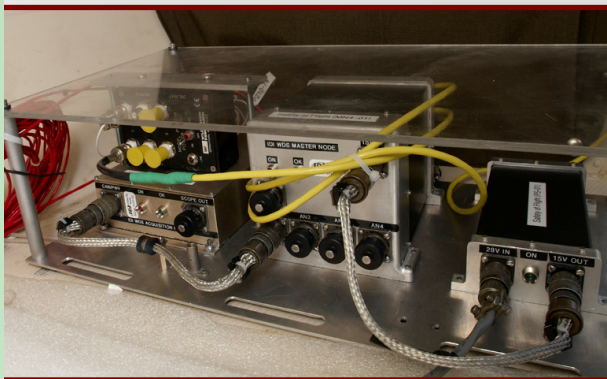


# PRODUCTS AND SERVICES

IDI provides a range of products and services for the aerospace, automotive, ship and power generation industries. Its patented commercial products span the following categories:

## Vehicle Health Monitoring:

- ❖ Aircraft wiring sensor system
- ❖ Fluid debris sensor
- ❖ Structural Integrity Monitor
- ❖ Wireless sensors
- ❖ Data acquisition systems
- ❖ Pattern recognition software



In-situ aircraft **Wiring Sensor System** for monitoring precursor damage such as wire chafing. Size, weight and power are key attributes for aircraft deployment.



**Fluid Debris Sensor** mounted in-line through the pipe wall perpendicular to the flow focuses ultrasound energy into the fluid. Particles within the focal region reflect the energy generating echoes proportional to the particle size.



**Structural Integrity Monitor** for assessing the health of aircraft structures using a network of distributed piezoelectric actuators and sensors.



Self-powered 8-channel wireless transmitter for measuring **Temperature and Strain** on rotating machinery. The device was used to monitor a TF-41 fan disk at China Lake in support of FAA research into engine failure modes.

## Weather Information Systems:

- ❖ Road Surface Condition Sensor
- ❖ Mobile Road Sensor
- ❖ Flood Sensor



**IceSight** uses infrared technology to detect hazardous Ice, Snow, Slush, or Wet pavement conditions. Information is uploaded to DOT networks. It can also be integrated with roadside warning signs or can activate embedded sprayers to disburse liquid anti-ice chemicals on road and bridge surfaces.



Mobile **IceSight** scans the road surface for hazardous driving conditions. The flexible data stream can be integrated with existing telematic systems for easy data transfer or sent to a hand-held device or lap-top for real-time monitoring.



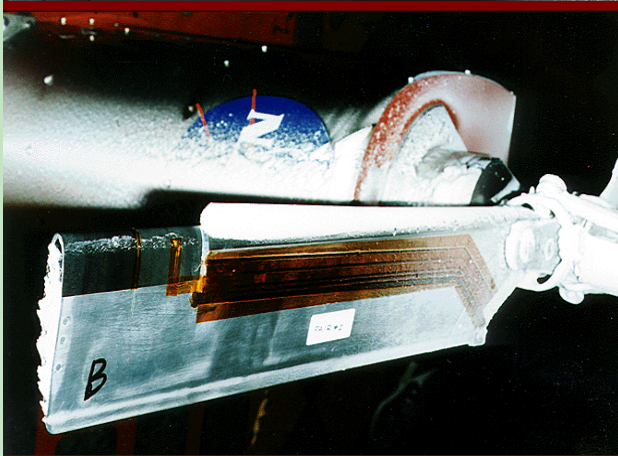
**FloodWatch** is a non-contact ceiling mounted infrared sensor protecting the home owner from catastrophic floods.

## Ice Protection Systems:

- ❖ Electro-Expulsive Deicer
- ❖ Shape Memory Alloy Deicer
- ❖ Capacitive Ice Sensor
- ❖ Cloud Property Sensor



**Electro-Expulsive Deicing Actuators** installed inside an aircraft's leading edge. The deicing system provides efficient low power deicing.



**Shape Memory Alloy Deicer** mounted on powered rotating rig in NASA Glenn's Icing Tunnel.



**Cloud Property Sensor** provides pilots with advanced warning of icing and volcanic ash. Particle type can be identified and measured.

## OUR CUSTOMERS

IDI works closely with its customers to develop focused and cost effective solutions. We are available to design both turnkey software and hardware systems according to customer specifications. We have developed strong relations with some of the world's leading industrial, military and research organizations.

## COMPANY FACILITY

IDI's main headquarters are located in a 10,000 sq. ft. fully equipped facility near the Tompkins County Airport in Ithaca, NY. The facility includes general and engineering offices as well as engineering labs and machine shop:

- ❖ Optics lab
- ❖ Electronics lab
- ❖ Structures lab
- ❖ Fluid/flow test rig
- ❖ Environmental chambers
- ❖ Atmospheric/road surface test site

## CONTACT

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