



# STTR Company with Exploration-Related Technology Acquired by Microsoft

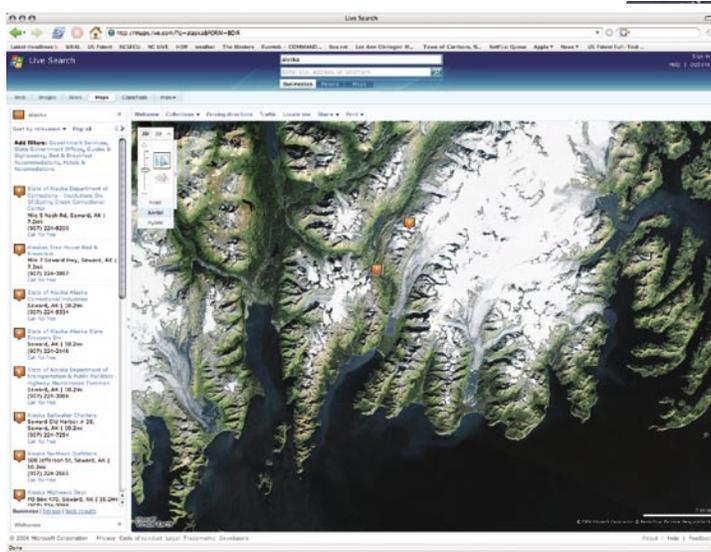


Image courtesy of Microsoft Corporation

Vexcel Corp., a recipient of Small Business Technology Transfer (STTR) Program funding from NASA Goddard Space Flight Center (GSFC), has been acquired by Microsoft Corporation as part of its Virtual Earth™ business unit. Vexcel's many technologies, including a wireless sensor network technology developed under the STTR funding, will help the computing giant produce rich, dynamic sets of imagery and data to be integrated into the new "Live™ Search: Maps" service, driven by the Virtual Earth geospatial data platform. The new sensor network technology will aid in high-speed handling of data critical to the project's success. Additionally, the new technology will have significant impact in Earth sciences field research.

[www.nasa.gov](http://www.nasa.gov)



## Benefits of Technology Transfer

- Scientists and researchers will be able to acquire and analyze data remotely using the STTR-funded wireless sensor network technology.
- The technology will contribute real-time information to Microsoft's Live Search geographic search engine with many "information telepresence" applications.
- The technology can contribute significantly toward NASA's efforts in both Earth sciences and interplanetary exploration.

tech transfer success

## On the Record

“Vexcel’s technology is very adaptable with broad applications for commercial use as well as providing an important step along the path that NASA is taking in Earth sciences and interplanetary exploration.” – *Dr. Robert Bindshadler, Chief Scientist, Hydrospheric and Biospheric Sciences Laboratory*

“NASA’s support for this STTR permitted me to work on the problem of data acquisition and recovery from harsh environments, which benefits not only NASA’s Earth sciences and interplanetary exploration goals but also our research partner Penn State and, by extension, the geoscience research community. It further applies to environmental enterprises such as disaster mitigation, civil infrastructure, and more. Microsoft’s interest in Vexcel confirms the potential for this technology and increases the return on NASA’s investment.” – *Dr. Robert Fatland, Geophysicist, Vexcel Corporation*

## About Vexcel Corporation

A worldwide leader in photogrammetry, imagery, and remote sensing technologies, Vexcel was founded in 1985 with headquarters in Boulder, Colorado and offices in Austria, Canada, the Netherlands, and the United Kingdom. Vexcel brings to Microsoft extensive experience in two-dimensional and three-dimensional imagery that will enable rich sets of aerial and street-side imagery to be delivered in a much easier and timely fashion. Vexcel will also play a central role in enabling Microsoft’s Virtual Earth platform to support dynamic contributions of information from users.

## Technology Origins

This technology takes NASA a step closer toward fulfilling needs for real-time recovery of remote sensor data. These wireless sensor network nodes or microsensors work similarly to a wireless office network, except that these devices relay data from many kilometers away. They were originally designed for wirelessly relaying seismology data between ground sensors on remote glaciers and ice streams in Alaska, Greenland, and Antarctica. They are enabling remote management of networks as well as networks that work in synchrony with robotic explorers. Managed networks of remote “microservers” that relay data unsupervised for up to two years can drastically reduce the costs of field instrumentation and data recovery.

## Finding a New Use

Microsoft needed the ability to gather real-time geospatial data (i.e., data connected to specific geographical locations) in order to provide users not only text data and maps from searches but also imagery including a bird’s-eye view and three-dimensional pictures. Vexcel’s Dr. Robert Fatland says, “The Virtual Earth geospatial data platform is moving towards a vision expressed as ‘browsing the physical Earth,’ enabling people to better understand their environments.”

## The Transfer Process

STTR is a highly competitive three-phase program that reserves a specific percentage of federal R&D funding for award to small

businesses in partnership with nonprofit research institutions to move ideas from the laboratory to the marketplace, to foster high-tech economic development, and to address the technological needs of the federal government. Vexcel partnered with Pennsylvania State University to develop the microserver technology under STTR Program awards from GSFC in 2002 (Phase 1) and 2004 (Phase 2). A commercial version was developed during Phase 3. Vexcel’s acquisition by Microsoft was announced on May 3, 2006.

## Looking Ahead

Beyond the original STTR-funded research and the Virtual Earth platform, Dr. Fatland’s objective is to “provide multiple real-time environmental information streams for a variety of uses but primarily geoscience research and education. Other important applications include health monitoring, disaster mitigation, civil infrastructure support, and many more. In fact, sensor networks are important because they are applicable to any situation where we benefit from extension of our senses into a larger environment.” Further development continues with funding from Microsoft as well as NASA’s Earth Science Technology Office’s Advanced Information Systems Technology program.

See current work related to the wireless sensor network at: <http://robfatland.net/seamonster>

## For More Information

If you would like additional information about Goddard’s technology transfer opportunities, please contact:

**Innovative Partnerships Program Office**  
**NASA Goddard Space Flight Center**  
e-mail: [techtransfer@gsfc.nasa.gov](mailto:techtransfer@gsfc.nasa.gov)  
internet: <http://ipp.gsfc.nasa.gov>