



**FOR IMMEDIATE RELEASE**

**Dr. Kurt Zimmerman to Present Pseudolite Paper at MINExpo®**  
*Session Details Usage of GPS Pseudolites at the Phelps Dodge Morenci Mine*

**Menlo Park, CA, USA—August 31, 2004** — Dr. Kurt Zimmerman, one of the pioneers of pseudolite technology, will be co-presenting a paper on the use of GPS Pseudolites in surface mines at MINExpo 2004. Details for this session are shown below:

**MINExpo 2004 Education Session**

Session: Surface Mining #2  
Date: Wednesday, September 29,  
Time: 8:15-10:15 a.m.  
Location: Please see MINExpo show guide

Title: GPS Pseudolites for Mining Operations

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**Abstract:** GPS signal augmentation is necessary where mine technology requires accurate X, Y, and Z positioning. Many mines have invested in GPS products such as CAES, Aquila, Dispatch, and MineStar. Unfortunately, most operations have discovered problems with GPS accuracy because of pit geometry or location that limit the number of visible GPS satellites. Fixed position solutions are not possible 24-hours a day, and in many areas, lapses in fixed coverage may extend up to 3 hours. An experimental pseudolite

system was installed at the Morenci Mine in 2001 to test real-time GPS augmentation in a harsh mining environment. Results and additional work are discussed.

For more information about MINEexpo 2004, go to [www.minexpo.com](http://www.minexpo.com)

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### **About Novariant, Inc.**

*Novariant is the premier industrial solutions provider for precision positioning, intelligent control systems and positioning infrastructures. Our precision solutions are enabled by the Global Positioning System (GPS) and other patented location and communications-based technologies to automatically steer equipment, map terrain, and land aircraft. Founded in 1994, Novariant (formerly named IntegriNautics) can be found at [www.novariant.com](http://www.novariant.com).*

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