



# ABOUT LOCATA CORPORATION

THE SATELLITE-BASED GLOBAL POSITIONING SYSTEMS (GPS) HAS ENABLED A RANGE OF NEW PROCESSES AND ACTIVITIES THAT RELY ON ACCURATE POSITIONING INFORMATION. AS THE EXPECTATIONS OF GPS HAVE GROWN, SO TOO HAS AWARENESS OF THE TECHNOLOGY'S LIMITATIONS. LOCATA HAS A SOLUTION.

- > Standard GPS receivers, at best, can provide positioning information only to within a 20 metre radius and accuracy degrades further if the receiver is in a built-up environment. The technology also fails if the receiver is inside a building and so shielded from the open sky.
- > Knowing that these problems can't be solved using traditional GPS technology, the Locata Corporation team has developed a ground-based system that can pinpoint locations to within centimetres, even when the receiver is indoors. Businesses,

campuses and communities can deploy Locata's technology to create their own highly accurate positioning system.

## STEALTH DEVELOPMENT

- > Founders Nunzio Gambale and David Small began developing the concept in 1995, after their attempts to build a GPS-based electronic guide system proved unworkable indoors. Both men had embarked on their task from the unlikely starting point as successful music industry entrepreneurs – Gambale as a music

store owner and Small as the owner of a recording studio.

- > Gambale says Locata only revealed its activities in December 2004, as the size of the opportunity they have identified meant they were keen to retain a head start.
- > "A large number of companies and engineers have thrown billions of dollars at trying to improve GPS in urban and indoor applications," Gambale says. "From a technological perspective, Locata has created something completely new. Locata is the only technology that allows you to

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— NUNZIO GAMBALE, CO-FOUNDER

autonomously create a GPS-style system on the ground.”

## MAJOR DISRUPTIVE TECHNOLOGY

- > Locata has 17 patents, with more filed or pending. The technology has become an area of study at the School of Surveying and Spatial Information Systems at the University of NSW.
- > The key to a highly accurate positioning system is the time signal used by the receiver to calculate its location. GPS uses extremely expensive atomic clocks on each satellite and complex military ground systems to achieve synchronisation. Despite this, the satellite systems still have to cope with synchronisation deviations in the range of nanoseconds, which result in 20 metre positioning errors for receivers.
- > Locata creates a network that is in almost perfect synchronisation without using atomic clocks. Each transmitter dynamically synchronises with other Locata transmitters using a patented method called Time-Loc. Gambale says that a Locata network currently “locks” to about 10 pico seconds, producing highly accurate

positioning information.

- > “For those that don’t recognise the number, that’s 10 thousandths of a billionth of a second,” Gambale says.
- > Each Locata base station (called a LocataLite) has an uninterrupted range of 3 kilometres, with indoor signal penetration similar to that of a mobile phone.

## COMMERCIAL SUCCESS

- > Gambale sees markets for Locata’s technology in the defence, mining, emergency services, construction and security industries. The technology’s accuracy means it can detect deformity in structures such as bridges, dams or nuclear power stations. Locata base stations could be deployed at a disaster scene to help coordinate emergency crews. The technology can be used in mining to help position equipment such as blast rigs. The company is working with BlueScope Steel at Port Kembla in NSW and with De Beers in South Africa.
- > Gambale says the technology integrates with existing GPS technology. This means a Locata receiver can use the satellite-based GPS system when outside

the range of a Locata network. To a GPS chip, the LocataLite appears as another satellite. The Locata network has also been designed to correct the errors in a GPS system in many environments, improving the accuracy of GPS to within a metre without requiring any of the expensive and specialized equipment currently needed to achieve a similar result.

- > The company sold its first Locata network in July 2005. Gambale believes Locata could generate sales in the order of \$250 million in five years time.

## EXPANDING IP PORTFOLIO

- > Future research and development will focus on the miniaturisation of the LocataLite transmitter and Locata receiver, with the latter embedded into a chip that can be easily integrated into devices such as mobile phones.
- > “Our aim is to become an essential ingredient for the positioning technologies of the future,” Gambale says. “Because of the incredible amount of new technology we’ve created, and our equally careful attention to fostering the business side of our company, we’re well on our way.”