CASE STUDY
Gemalto and Cargo Tracck Team Up for a Successful Sting Operation
The Amazon rainforest in Brazil is vital to stabilizing the earth’s environment, producing oxygen, absorbing greenhouse gases and providing natural habitat for 30% of the world’s plant and animal species. However, strong global demand for rainforest wood combined with the enormous profitability of illegal logging operations is fueling decimation of this precious global resource at an alarming rate. More than 4,000 square miles of Brazilian rainforest has been destroyed in the last two years alone with 224,000 square miles decimated since record keeping began in 1980. With current lumber prices at an eight year high, lumber gangs unlawfully felling trees for profit have become increasingly pervasive - and with devastating environmental consequences. Traditionally, satellite and radio monitoring were effective at policing the massive Amazon rainforest, which is roughly the size of the United States. But as sophisticated thieves abandoned clear-cutting for stealthy new logging strategies that target small tracks of the most prized trees, new monitoring methods and strengthened protection were needed. IBAMA, Brazil’s environmental protection agency, enlisted the help of Cargo Tracck to develop new technology to help locate and identify thieves so they can be brought to justice.

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In June 2012, with international attention tuned to Brazil and the United Nations’ Rio+20 Conference on Sustainable Development, Cargo Tracck and Gemalto devised and executed a successful pilot program and sting operation that demonstrated how powerful Machine-to-Machine (M2M) technology can be used to catch thieves in action and stop deforestation. Designed by Cargo Tracck, the discreet tracking solution uses Gemalto’s tiny and powerful Cinterion® BGS2 M2M module to enable cellular communications between trees and law enforcement. New Radiation Data Exchange (RED) technology boosts the range of wireless communications extending the reach to extremely remote areas that lack mobile network coverage. Smaller than a deck of cards, the tiny tracking device is camouflaged in a resin case made to blend in with the trunks of trees. Ten of the devices were covertly installed in remote active harvesting areas deep in the jungle. In addition, specialized night vision cameras were installed in nearby trees to capture visual evidence of illegal logging activities. The sophisticated power management system of the Cinterion module provided superior power efficiency allowing the device to operate reliably in the field for over a year without recharging batteries. When lumber gangs harvested a tagged tree, the solution immediately began sending alarms to law enforcement officials. Cargo Tracck’s leading-edge geo-location algorithms, along with the RED boosters provided unprecedented location accuracy, delivering tracking data and alarm notification to officials as soon as harvested trees passed within 20 miles of a cellular network. This allowed officials to remotely track trees and intercept and arrest thieves in the act of selling timber at sawmills, which ultimately led to quicker prosecution.
Deforestation of the Amazon causes significant environmental and global economic damage. Environmental consequences include soil erosion and climate change estimated by the Skoll Foundation to cause roughly one-fifth of global carbon emissions. Economically, the illegal lumber trade depresses world timber prices and accounts for up to $7 billion in lost capital for producing countries every year. To adequately fight illicit logging trade and make criminals accountable, it is vital to catch thieves in the act. It is exceedingly difficult to track timber after it has been smuggled out of the country or sold and processed at sawmills. The Cargo Tracck device provides a new, cost effective solution for real-time, remote monitoring and it delivers new hope for preserving one of Brazil’s most precious resources. With Gemalto’s ultra-compact Cinterion module, the device is small enough to remain undetected in logs, rugged enough to operate reliably in rainforest heat and moisture, and powerful enough to track trees through remote and dense forests. Combined with the sophisticated software developed by CargoTracck, the solution allowed tracking even in no or low GSM coverage areas. Addressing these geographic and environmental challenges had previously eluded law enforcement using satellites and other traditional methods.

Gemalto’s Cinterion M2M technology is integrated in a variety of innovative solutions that enable machines, devices and even trees to communicate on mobile networks to improve processes, productivity and efficiency. The Cargo Tracck solution highlights how Gemalto M2M technology can be applied to help deter crime and protect the environment. It is also used to enable secure POS transactions; remotely manage assets, buildings and industrial operations; improve productivity of fleet operations as well as power specialized industrial PDAs for work forces. For more information on the many ways in which Gemalto M2M is simplifying and improving the way we live and work, please visit: http://www.cinterion.com/m2m-world/explore.html.

Footnotes
1 Amazon Wildlife, Rhett A. Butler; http://rainforests.mongabay.com/amazon/amazon_wildlife.html
2 Deforestation of the Amazon, Rhett A Butler, May 20, 2012; http://www.mongabay.com/brazil.html
4 The Amazon: The World’s Largest Rainforest, Rhett A Butler; http://rainforests.mongabay.com/amazon/
5 The Skoll Foundation; http://www.skollfoundation.org/issue/deforestation
About Gemalto

Gemalto (Euronext NL0000400653 GTO) is the world leader in digital security with 2011 annual revenues of €2 billion and more than 10,000 employees operating out of 74 offices and 14 Research & Development centers, located in 43 countries.

We are at the heart of the rapidly evolving digital society. Billions of people worldwide increasingly want the freedom to communicate, travel, shop, bank, entertain and work – anytime, everywhere – in ways that are enjoyable and safe. Gemalto delivers on their expanding needs for personal mobile services, payment security, authenticated cloud access services, identity and privacy protection, eHealthcare and eGovernment efficiency, convenient ticketing and dependable machine-to-machine (M2M) applications.

Gemalto develops secure embedded software and secure products which we design and personalize. Our platforms and services manage these secure products, the confidential data they contain and the trusted end-user services they enable. Our innovations offer more ways for our clients to enhance the convenience and security of people’s digital lives.

Gemalto thrives with the growing number of people using its solutions to interact with the digital and wireless world.

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