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Kizy Tracking Solution Uses Cellular Network to Locate Goods

Newly founded technology company Kizy Tracking has developed what it describes as a low-cost alternative to conventional RFID or GPS solutions that is able to track goods anywhere

within range of a GSM cellular radio tower. The only hardware that users need purchase is a battery-powered K-1 GSM Tracker tag, priced at \$35 apiece; the only other expenses are a \$1 activation charge and a daily \$0.25 fee to access location data on a hosted server. The Swiss firm is selling its K-1 GSM Tracker tag for use in containers or with cargo that is shipped, in many cases, around the world.

Kizy was launched on January 1 of this year to provide a tracking solution that would cost less than conventional RFID, but would also be more automated than solutions utilizing bar codes, which require manual scans. The company's name, pronounced "kee-zee," is derived from the words "tracking" and "easy." According to Ruud Riem-Vis, Kizy's CEO, the use of traditional battery-powered RFID real-time location system (RTLS) tags for tracking cargo loaded into vans in cartons or containers can be unrealistic, due to the need for a reader infrastructure wherever the cargo is transported. This can be particularly cumbersome, he notes, if readers—along with the cables required to connect those devices with a back-end server, and to provide the necessary power—must be installed along a supply chain route. In the case of passive RFID tags, handheld or fixed readers must be provided to users throughout the supply chain. Alternatively, Riem-Vis says, some vehicles come equipped with GPS systems that can send location data back to a server, but require a power source that may not always be available.



The battery-powered K-1 GSM Tracker tag features movement and light sensors, as well as GSM radio.

Riem-Vis says his Neuchâtel-based company was founded to provide an alternate, less expensive way for businesses to keep an eye on their goods throughout the supply chain—a service for which, he says, “the entry barrier is very low.” Postal and carrier companies are already employing a variety of methods to monitor the progress of shipments to customers, Riem-Vis says, and could often benefit from this low-cost alternative, as could recycling companies tracking the locations of bins, as well as manufacturers and logistics

firms that frequently ship products across several continents. Other companies that move their own assets from one facility to another could use the technology to track where each item is located.

The K-1 GSM Tracker tag measures 100 millimeters by 48 millimeters by 9.8 millimeters (3.9 inches by 1.9 inches by 0.4 inch)—about the size of a small cell phone—and features movement and light sensors, as well as GSM radio. Citing the Swiss tradition of making watches and long-lasting batteries to power them, Riem-Vis says his company developed the tag to use only the minimal amount of power necessary, thus ensuring that it can transmit a signal for up to a year without requiring a battery recharge, via a standard mini-USB cable.

The device employs a standard GSM communication protocol to transmit its ID number and sensor data at specific user-set intervals, or only when its sensor determines that the tag is moving. To adjust the beacon rate, a user can simply log onto the hosted server and select the desired configuration. The system then transmits that beacon rate instruction over the air to the tag via the GSM network, and the tag responds accordingly. The rate of beaconing can be set from once every 15 minutes to every two hours during a “mission”—the span of time during which its location and sensor data is tracked—and once every six, 12 or 24 hours when inactive. The daily price for tracking the tag remains the same, regardless of the selected beacon rate.

The tag can also transmit a signal when its sensor detects a change in light level, thereby indicating that a container is being opened (assuming the tag is stored within a container). This data could then be received on the hosted server and be forwarded to authorized parties, enabling them to know if a container has been moved or opened when it should not be, and to ascertain the general location of the container or vehicle at that time.



Kizy's
Ruud
Riem-Vis

A user can put the tag into and out of commission via cloud-based software, in order to indicate the beginning and end of each mission. When a container, vehicle or asset is not in motion, the \$0.25 daily fee is not charged. There is a \$1 activation charge at the beginning of each mission.

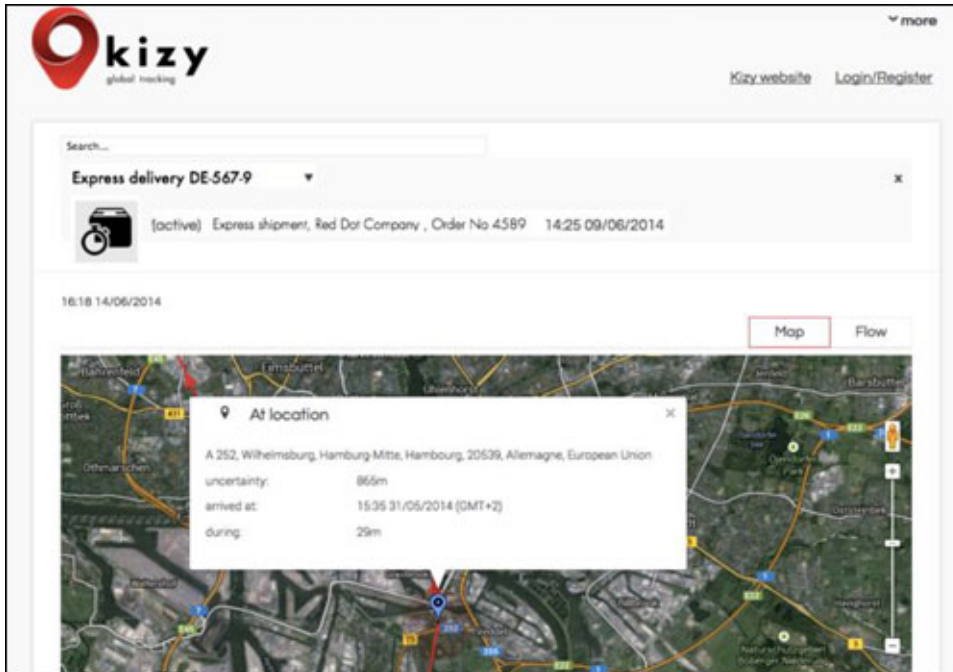
To first commission a tag, a customer logs onto the Kizy server via an Internet-connected mobile phone and creates a user name and account. He or she uses the handset to scan the QR code printed on the front of the tag, and then assigns that tag an ID name (linked to its unique ID number) and, at the beginning of a mission, selects "start track." The tag normally beacons whether or not it is being tracked. However, the tag itself can be switched off manually, at which point it will cease emitting a signal.

The server software presents data regarding the tag's location in the form of a timeline, with the most recent location listed at the top. Users can also set the system to display the location on a world or local map of the area.

The tag's location accuracy ranges from about 200 meters (656 feet) to up to 2 kilometers (1.2 miles), depending on the GSM network density—not as precise as it would be with conventional RFID-based RTLS technology. In many instances, multiple towers will receive the K-1 tag's transmission, and triangulation can then be applied to calculate its location with an accuracy closer to the 200-meter end of that range.

Three large companies in Asia are currently trialing the

technology to determine how well the tags can enable users to identify where their goods are located any time they come within range of a cell tower. These firms have asked not to be named.



Kizy's online software can display a tag's location on a world or local map, or present that data in the form of a timeline, with the most recent location listed at the top.

European telematics company Lostnfound is also providing Kizy's tags and service to some of its customers. Most of Lostnfound's customers employ GPS-based location technology, according to Daniel Thommen, the company's CEO and managing director. The Kizy system, he says, "is very easy to use and very cost-effective." Several logistics companies and other firms seeking to track their assets are presently trialing the technology, he notes, adding, "People like the fact that it is easy and cost-efficient." A growing number of his customers are requesting temperature-monitoring functionality with the tags, he reports.

To meet this demand, Riem-Vis says, Kizy Tracking plans to offer a tag that comes with a built-in temperature sensor. This, he explains, would enable users to track the conditions

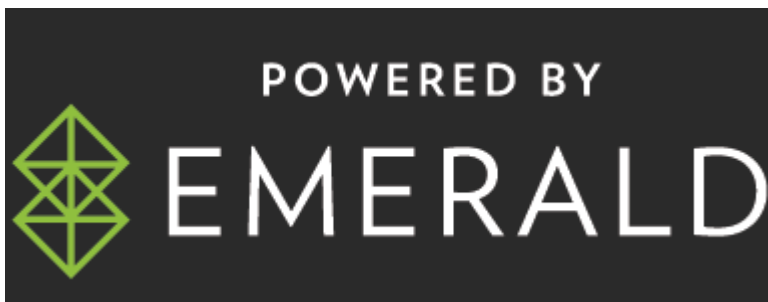
inside a container or van under which sensitive items, such as perishable foods or medications, are transported.



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