The Ultimate Railcar Tracking Device for Africa

Inteletrack have developed the ultimate railcar tracking device for the African environment. Ten railcar trackers were installed on railcars destined for Zambia. The performance of the railcar tracker exceeded all expectations.

Railcar Tracker

The railcar tracker consist of a satellite transponder that is mounted in a rugged bracket and is power by solar energy.

Satellite Transponder

Many tracking devices are available that using GSM as communication medium. The problem in Africa is that these device must communicate with mobile phone towers. These towers are mostly not located next the railway lines and therefore large sections are not covered by GSM.

The satellite transponder can be mounted anywhere on the side of a railcar 100% communication is guaranteed.

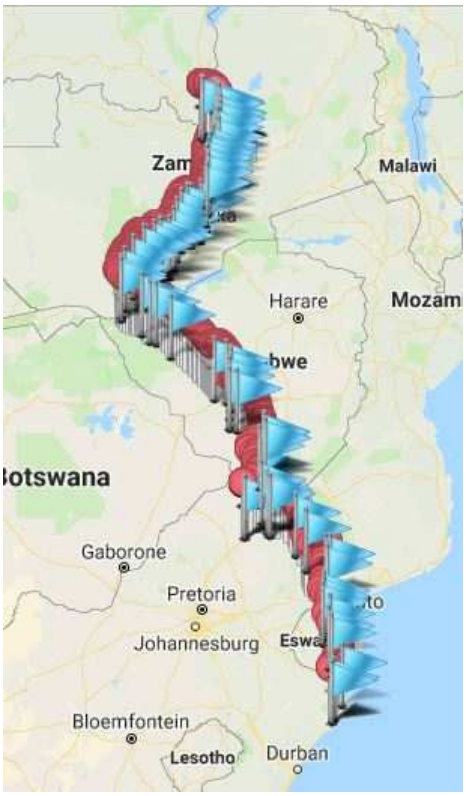
Rugged Mounting

The satellite transponder is protected with a 100mm polycarbonate window that is used on aircraft. It can withstand the impact of a hammer or fallen trees next to the rail track.

Solar Power

Solar power ensure continuous operation for the lifetime of the railcar tracking device. Even with no sun light, the device will still report up to 30 days.

Real Time Tracking



The tracking parameters for the tests was set as follow:

The device reports on the following incidents:

- When moving, every 15 minutes
- When stationary , every 12 hours
- Change from stationary to move – If the railcar move more than 200 meters in 4 minutes.
- Change from moving to stationary – if there is no more than 200 meters movement in 4 minutes period.

A web browser display the real time movement of the railcars. The red dots indicate movement and the blue dot the stoppages.

As the system is not land based, 100% coverage was reported from Richards bay to Kitwe in Zambia.

An API to interface with the customer's database is also available.

Derailment

During the trip, three railcar derailed near Pemba.

It was possible to exactly display the position of the railcars next to the track. Due to the rugged mounting of the railcar tracker, the system survive the derailment and recovery of the wagons. The railcar trackers continued tracking the railcars 100 % on the route to the destination and back.

Reliability.

Ten railcars were fitted with the railcar tracker and after 10 weeks all the units are still 100 % functional.

Telemetry

The basic tracking unit can be expanded into a telemetry unit that can monitor door open/ close, fuel levels an even locomotive parameters using Modbus interface.

Logistics.

Of the original 10 railcar trackers installed on a train, it landed up in 7 different locations due to the derailment of wagons and repair of faulty wagons. This illustrate the complexity of management of the logistic of railcars in the African environment.

Cost

Due to the high efficiency of the data transmission with satellite, the monthly running cost of the tracking is very low.

Summary

The railcar tracker everybody always dreamed about.