



## WAN Beacon & Hub Tracking / monitoring Solution

TrackerSense has taken its robust and proven GPS/GSM tracking solution to the next level, by adding a low cost Beacon capability.

### Overview:

This solution is designed for instances where:

Data gathering e.g. temperature monitoring, is required with no infrastructure set-up and a low cost per end point and / or tracking of low value assets, where the cost of a full GPS tracker cannot be justified.

Very attractive in environments where permanent power is infeasible / expensive to install or charging of batteries frequently is too costly.

The solution consists of 2 components:

A Hub which will collate data from the beacons and transmit it to a central server.

A low cost, small and long life (up to 5 years) Beacon.

In order to make the Beacon an "install and forget" product, the Beacon will have a battery life of up to 5 years (so that it doesn't need to be changed). If the Beacon is within range, +/- 1000 ft. of a Hub, it will check in with the hub and transmit its data. The Hub will then, on a predefined schedule, make a GSM connection to the server and transmit the Beacon data packet + the GPS position of the Hub. So that in the instance where a Hub (and associated Beacons) are mobile, e.g. on a truck travelling, the effective GPS position of each of the Beacons will also be known.

The Beacon can be designed to send various (any) sensor data, but the initial solution will be able to send:

Temperature

GPS Position

Battery level

Example Applications:

#### ASSET TRACKING

The initial targeted application is in the postal area, where they want to track their valuable roll cages (trolleys). Investing in a GPS tracker per cage isn't cost effective.

Therefore a solution was designed to still track the cages, but using a low cost WAN RF infrastructure.

Due to the low capital cost and zero installation cost of a hub, they can be installed pervasively. For example, each warehouse, truck, trailer and even client site, will have a hub/s installed. The Hub "Installation" requires nothing more than being plugged into a power point.

The Beacons are affixed to the cages and therefore, provided a cage is within range of a hub, the client will know where their cage is. If a cage (Beacon) is taken away from an area that was covered by a Hub, the client will know where that cage last checked in, and therefore where there is a potential leakage point.

This technology is envisioned to provide the client the following benefits:

- Identifying cage stock that is used infrequently and move it to higher use areas, to improve capital return
- Improved roll cage management (no manual counting/no employee costs)
- Improved workflow management - knowing how the cages travel and improving distribution
- Knowing exactly how many cages are at each venue, i.e. centers cannot give you inaccurate figures to keep additional cages on their sites.
- Identifying leakage points - reduce loss significantly
- Identify areas to initial searches to find lost cages - by driving a truck around an area of suspected lost cages - you would be able to identify any lost trolley's in the near vicinity

- Reducing the stock of cages purchased - as you can manage the existing stock better.