"Repeater Device" - Special communication solution for the field

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Introduction

- Ordnance Survey’s GPS network
- Repeater device
The Current OS Net Network

- 90 base stations in operation
- Density enables RTK positioning services across most of the country
OS Net structure

RTK for Ordnance Survey surveyors via GPRS / GSM

Raw GPS data in RINEX format for www.ordnancesurvey.co.uk/GPS
Server architecture

- Osnet01 Osnet05: Data Distribution (Clustered)
- Osnet02 Osnet07: Western Network
- Osnet03 Osnet06: Eastern Network
- Osnet08 Osnet09: Northern Network
- Osnet04 Osnet10: RINEX Data Store
- Osnet11 Osnet12: VRS / NTRIP Servers (Clustered)
OS Net Sub-networks
OS Net route to market

1. Ordnance Survey
   - Raw OSNet Data

2. OSNet Partner
   - Various positioning services

3. End User
   - Various positioning services

4. Subcontractor
   - Derived information (reports, maps, plans, data etc.)
The Repeater Device – The Why

• Technology solution to areas of poor GPRS/GSM coverage

• Provides a robust method of sending corrections to users

• Provides for a simple, standard method of operation
Repeater Unit
Key Features

- Repeater consists of a cheap GPS receiver and phone and is connected to a VHF radio
- Audio and visual phone power guide
- Repeater stays in the car boot out of sight
- Powered through internal or external battery or car charger
- Biases to GPRS, but will use GSM (auto switching)
- Capacity to take two SIM cards
The Repeater Device – The How

- Designed internally, manufactured by Roke Manor Research (a Siemens company)
- In use by all Ordnance Survey’s 130 GPS equipped surveyors
The Repeater Device – The What

- Battery
- Repeater
- Phone antenna
- GPS antenna
- VHF Radio
- Radio antenna
Backpack GPS receiver

Repeaters

OS Net

USB to PRISM

Radio port 1

GPRS/GSM

Repeater
Close sites
(Leave Repeater connected)

3 km
Spaced sites
(Leave Repeater on but **not** connected)
For further information

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