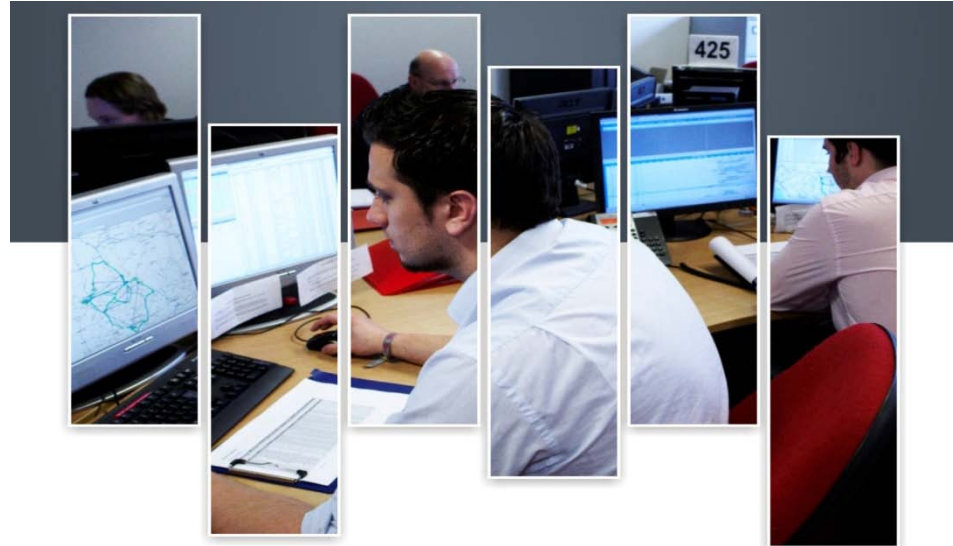


Bringing service to life



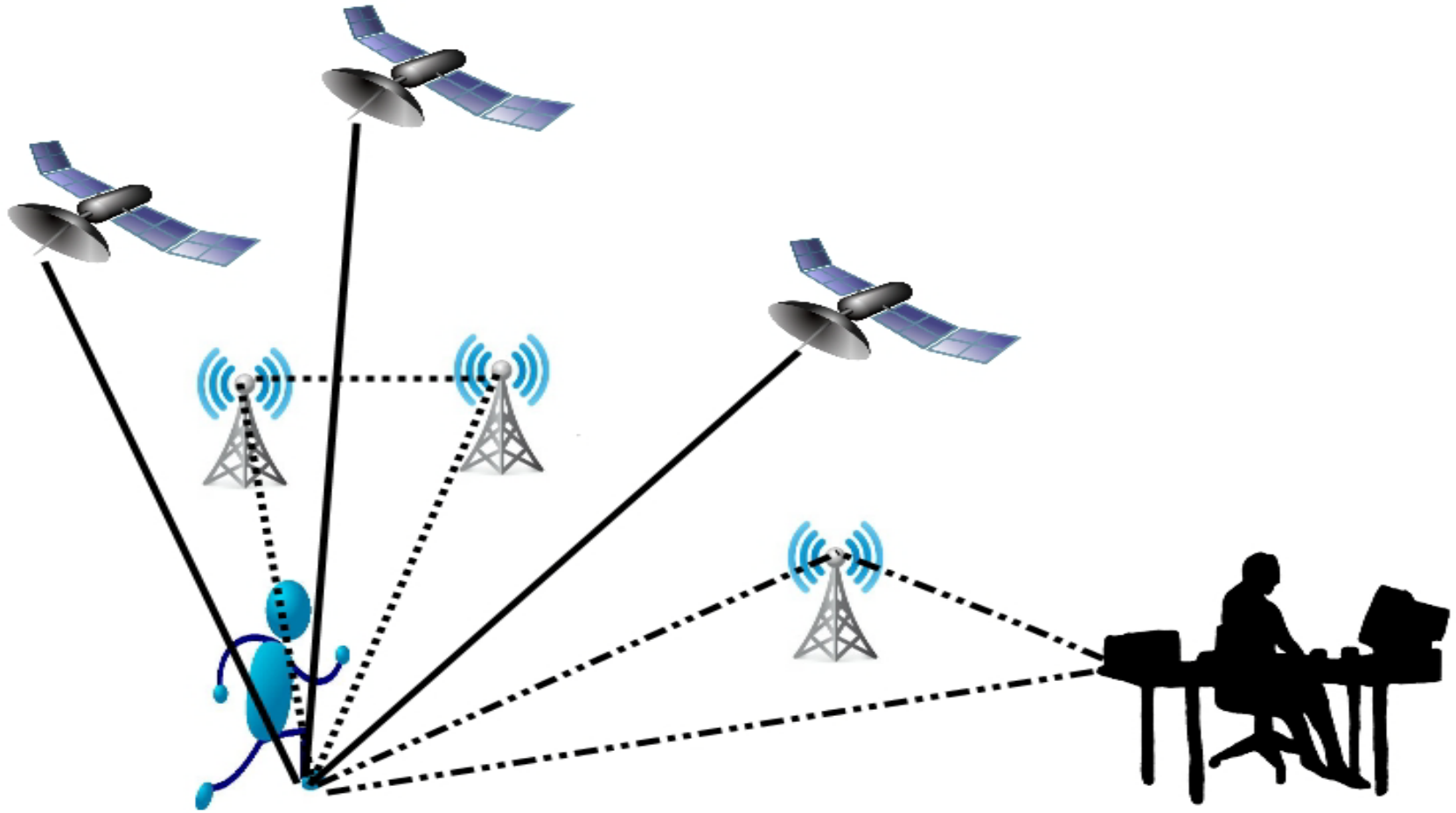
GPS Tracking

A Service Approach



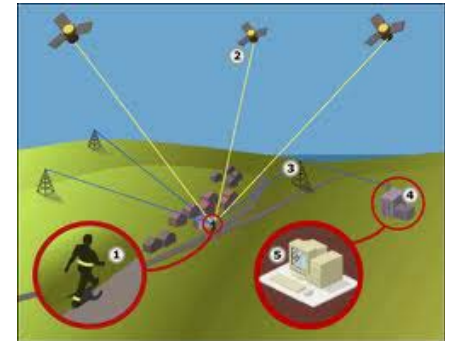
2nd November 2012

- What is GPS Tracking?
- GPS equipment and technology.
- How can this technology be used?
- Details of our GPS Tracking Pilots.
- How can we maximise the benefits of GPS technology?
- Q&A.



What is tracking? –

A GPS tracking unit is a device that uses the Global Positioning System to determine the precise location of a vehicle, person, or other asset to which it is attached and to record the position of the asset at regular intervals.



The recorded location data can be stored within the tracking unit, or it may be transmitted to a central location data base, or internet-connected computer, using a cellular (GPRS or SMS), radio, or satellite modem embedded in the unit. This allows the asset's location to be displayed against a map backdrop either in real time or when analysing the track later, using GPS tracking software.



What is Trilateration?

The Global Positioning System (GPS) is actually a constellation of 27 Earth-orbiting satellites (24 in operation and three extras in case one fails). The U.S. military developed and implemented this satellite network as a military navigation system, but soon opened it up to everybody else. Each solar-powered satellite circles the globe at about 12,000 miles making two complete rotations every day.

The orbits are arranged so that at any time, anywhere on Earth, there are at least four satellites "visible" in the sky.

A GPS receiver's job is to locate four or more of these satellites, figure out the distance to each, and use this information to deduce its own location. This operation is based on a simple mathematical principle called trilateration.

1 Piece - The Tracking Bracelet (tag)



2 Piece - The Tracking Bracelet (tag) and Unit



The Home Beacon



One Piece Tracking Unit (OPTU)

The OPTU can serve as a stand alone presence monitoring system (RF), Reporting Events and Violations of a subject's curfew.

- Single GPS Tracking device – Can also be used with beacon for home curfew
- Gives a GPS plot every 60 seconds, and every 30 seconds when in violation
- Back up LBS (Lower Base Signal) detection available
- Strap and case tamper detection
- Motion with no GPS detection
- LED indicators and vibration alerts
- User configurable alerts
- Hypoallergenic, waterproof and tamper resistant
- 24 hour battery life



Two Piece Tracking Unit (TPTU)



The TPTU works by attaching a Transmitter to the subject, and the Tracker is the hand held device that receives signals from the Transmitter, thus monitoring the presence of the 'tag'.

It allows for text and audio communications to the subject via the device.

TPTU features include:

- Gives a GPS plot every 60 seconds, and every 30 seconds when in violation
- Motion with no GPS detection on tracker
- Low level (battery & power) and violation warning alerts via automated texts
- Adjustable ranges
- Transmitter has strap and body tamper devices
- Transmitter is hypoallergenic, waterproof and tamper resistant
- Back up LBS detection available
- Visual warnings on tracking device

Home Curfew Beacon

The Home Curfew Beacon features the ability to further define a subject's Home Curfew inclusion zone where the GPS signal is masked or unavailable. The Home Curfew Beacon communicates certain events to the subject through audible beeps and LED lights.

Home Curfew Beacon features include:

- Adjustable ranges
- Functional Status Indicators: Tracker present, Battery, Motion
- Low level warning LED's, Power and Battery Status
- Multiple Tamper Detection: tilt, tamper, motion & power disconnect
- 12 hour battery power



● LED's 1 & 2 – Tracker within range of beacon

● LED 3 – Battery Level

● LED 4 – Power Supply

- Uses the latest GPS technology.
- Allows the setting up of inclusion zones or exclusion zones.
- The offenders location is constantly uploaded to the system so that any violations can be immediately dealt with.
- The Monitoring Software has the capability to:
 - Zoom in and out of scale
 - Display last known position
 - Print Maps of subjects path
 - Display exclusion/inclusion zones
 - Produce detailed user defined reports
 - Display the wearers path on integrated maps for specific time periods

How can the technology be used? –

Monitor Inclusion zones

- Can be tailored to specific days, times and dates, where the subject must be within a given location. (e.g. This could be the offender's curfew address.)

Monitor Attendance

- Rehabilitation courses, appointments or the offender's daily place of work etc.

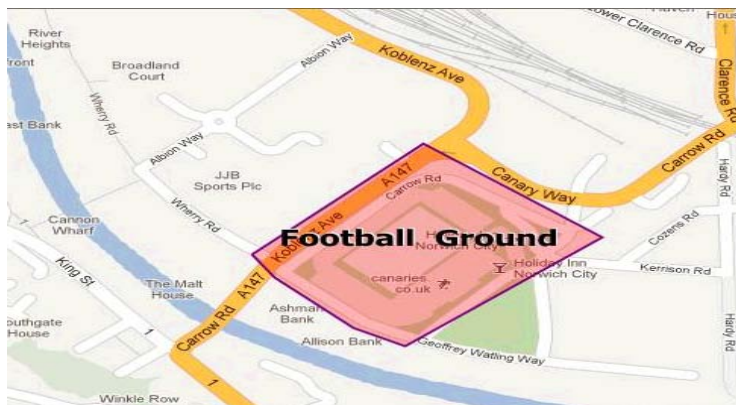
Monitor Exclusion Zones

- Can also be tailored to either specific days, times and dates, blanket exclusion or a combination of both.

Sports Grounds	Housing Estates	General Parks
Supermarkets	Schools	Public Areas

How can the technology be used? –

Inclusion & Exclusion zones



How can the technology be used? –

Support Victims of Domestic Violence:

- Victims home address, place of work, victim's family members, victim's children's school or college. Residences of children deemed in danger of abduction by an aggrieved parent.

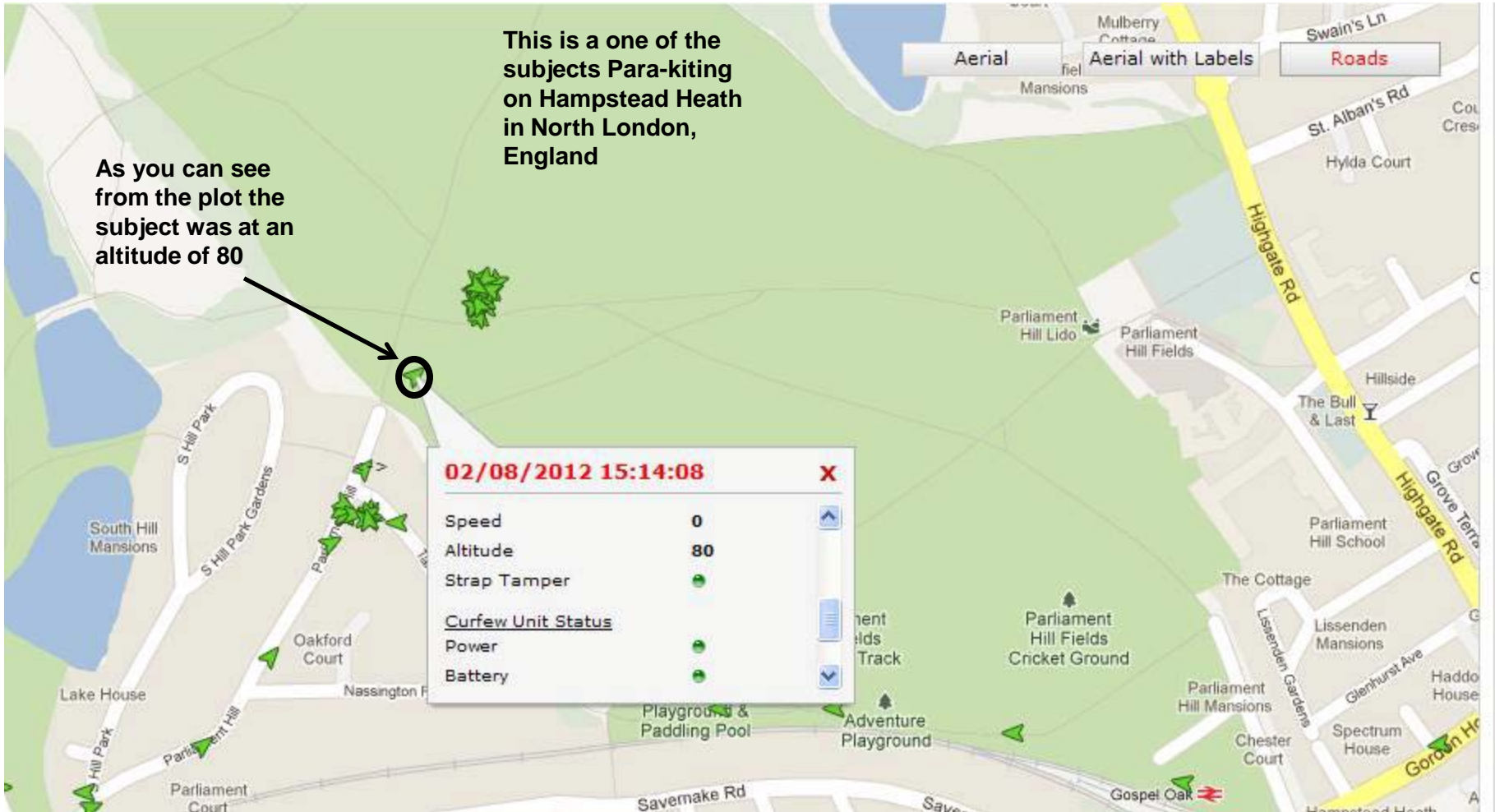
Monitor Eviction

- The offender can be constantly monitored while homeless residing at a temporary address offering their continual known whereabouts while arranging new accommodation

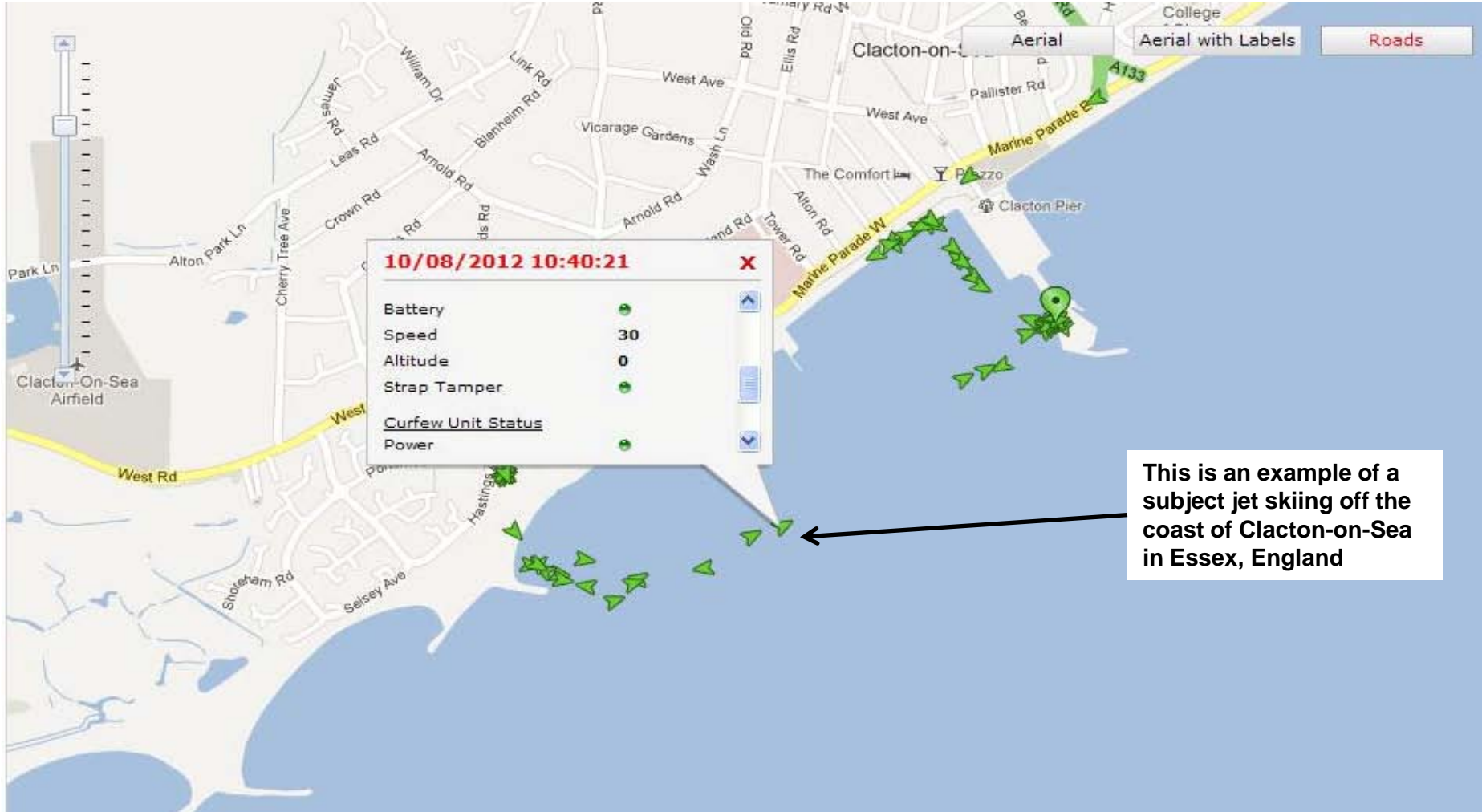
Example of a client's



example of a client's movements –



example of a client's movements –



example of a client's movements –



HDC Scale Pilot

The HDC scale pilot is trialling tracking technologies with 6 prisons in the Norfolk and Suffolk region:

- HMP Norwich
- HMP Wayland
- HMP Highpoint
- HMP Hollesley Bay
- HMP Blundeston
- HMP Warren Hill



The pilot adopts very much the same model as the current monitoring of HDC licences, in that the tracking is a condition of the subjects release and any confirmed violations will be treated as a breach of their licence

Scale pilot –

- We call and process violations reported to the system and we visit the subject for violations etc. (All tracking events have been ‘mapped’ to their RF alternative, and have been dealt with in the same way as we deal with the current RF alternative, as the current contractual requirements/SLA’s apply)
- All inductions take place at the releasing prison and a follow on visit to install a monitoring unit at the residence address takes place in the evening for communicative purposes only
- The scheme is voluntary and the subject may apply to the prison to withdraw from tracking and move to RF monitoring



Scale pilot –

- Records plot locations of tracker by utilising GPS technology
- Transmits data via GPRS to monitoring centre
- By Geo-fencing a persons curfew address, tracking technology can be set to specific schedules and locations to monitor HDC compliance
- Can also monitor exclusion zones



Scale Pilot –

- To demonstrate integration with existing Serco software & processes with 3rd party equipment and software
- To test and measure the effectiveness of GPS based tracking compared to traditional RF electronic monitoring technology
- To demonstrate and prove prison site installation
- To measure the effectiveness of GPS monitoring and whether the technology is operationally viable & scalable
- To demonstrate that Serco can perform to current HDC contract whilst applying new technology

scale pilot –

- Enhanced Public Protection
13.3% more people monitored on first night of curfew.
- Increased compliance with licence conditions
Completed Breaches fell by 18.9% (38.2% - 19.3%)
Subjects with absences over 2 hours fell by 16% (23% - 7%)
- Deterrent from re-offending
- Cost savings
- Evaluation of advancement in electronic monitoring technology

scale pilot –

	Yes	No
Have you been tagged before?	17%	83%
On a scale of 1 to 10 (1 being very uncomfortable, 10 being very comfortable) how was the tracker to wear?	Average score: 2.3	
Has your daily routine been affected in any way by wearing the tracker?	83%	17%
On a scale of 1 to 10 (1 being very difficult and 10 being very easy) how was the tracker to keep charged?	Average score: 8.6	
What were the benefits of wearing the tracker?	People identified early release and the ability to prove their whereabouts if needed as advantages of tracking, and how they were then able to support their family.	
Did the Serco Field Officer fully explain your tracker on induction?	83%	17%
Did you feel that you were able to ask any questions during induction?	100%	0%
On a scale of 1 to 10 (1 being very poor and 10 being very good) how helpful did you find the Serco field staff during visits?	Average score: 7.5	
On a scale of 1 to 10 (1 being very unhelpful and 10 being very helpful) how helpful did you find the Serco staff (on any calls made/received)?	Average score: 9	
Did you find the leaflet and booklet provided to you helpful?	50%	50%

GPS pilot –

(Prison Service Manager HMP Blundeston)

“I am very pleased with the way the pilot scheme has worked as a partnership between Serco and Blundeston. Your officers have been prompt, helpful and professional and I can raise no issues with you. I feel the communication between us has been good and any initial problems were quickly ironed out. I am more than happy to continue our working relationship into the future”

(Prison Service Manager HMP Norwich)

“We have no concerns from this end. Since some initial minor teething problems everything has gone very well.”

(Prison Service Manager HMP Wayland)

“I have sent something out to everyone in HMP Wayland that has been involved in the GPS pilot, and all of the feedback I have received is very positive. There are no concerns on this end and everyone is happy with how the pilot went. The only negative response I received was from two of our volunteers that came off because they found it uncomfortable to wear.”

- The NSPT pilot is a new concept to the monitoring centre where we track orders provided to us by the police.
- Our agreement is with a specific branch of Norfolk Police – The 180 Team, who manage prolific offenders.
- The Norfolk 180 Team are the ‘Data Owners’ and Serco Monitoring are ‘Data Processors’.
- Inductions and visits are completed at agreed probation offices/police stations.
- At the induction visits the subjects offender manager is in attendance so any questions can be asked of not only the field staff but of the offender manager also, this equates to a more ‘joined up’ approach for the parties involved.
- The Scheme is completely voluntary and the subject has the right to remove consent at any point, to be removed from the scheme.

▶ ▶ ▶ ▶ ▶

29/08/12 13:00 – Subject Installed on One Track

01/10/12 10:39 – Email received

- Detective Constable XXXX wanted to confirm if the Subject was recorded as going into Norwich from Midday on the 28/09 to now. Subjects Trail was checked from 12:00 on the 28/09/2012 to 01/10/2012 at 10:34.
- It was confirmed that the Subjects trail showed that he did not go into Norwich over this time period.

▶ ▶ ▶ ▶ ▶

28/6/12 14:30 - Two Piece Induction Completed

14/7/12 12:51 - Telephone Call received.

- DC XXXX stated through our intelligence reports last night (Friday) the subject was arrested away from the property, the subject is currently remanded and to be charged with Breach of his probation curfew and theft from a motor vehicle but it is expected the subject will be granted Bail Monday morning 16/07/2012.

19/7/12 12:48 - Telephone Call Received.

- Tracking suspended subject remanded to HMP Norwich, Tracking Device held at Dereham Police Station

Subject served 10 weeks in custody.





Email received from Police.

- Sadly I have the GPS tracker fitted to XXXX XXXXX in the boot of my car available for collection. The tag worked a treat and showed how valuable this tech is. But for James the tag on his ankle didn't stop him from going to the places he shouldn't and he was arrested on Thursday and has now decided to return to his parents in Essex for the foreseeable future. When arrested he ripped the tag off, but I have it complete and available to collect at Kings Lynn.

2/7/12 08:57 Email Received.

- We had an incident of Burglary that fits the above mode of operation for XXXXX, please could we check if XXXX has attended this address between 10:30 Saturday and 16:00 on Sunday;
- Report of attempted Burglary at XXXXXX, XXXXXX, XXXXXX overnight. Entry gained to outbuilding used as a book store. Store had been left unlocked so no forced entry gained. Blood marks and cigarette butt found within store. Items recovered for examination by CSI.

Subject not linked to crime



17/9/12 14:59 – Email Received.

- Could the mapping please be commissioned for XXXX XXXXX and XXXX XXXXX to establish their movements over this previous weekend.
- The reasoning behind this is due to a series of burglaries over the weekend.
- I can appreciate that this piece of equipment is just as good in eliminating them from the enquires as it can be to include them.
- The burglaries were
- 13th 1730hrs -14th 0715hrs September PE31 XXX
- 14th September 1105hrs-1617hrs PE30 XXX
- 15th 1030hrs-16th 0830hrs September PE36 XXX
- 14th 1000hrs-1355hrs PE30 XXX-lacoste footprint recovered for you awareness only at this stage.

Trail reports sent for these dates and times. Subjects excluded from investigation



Russ Wilkinson



- Induction at source is viable.
- GPS technology can improve compliance.
- GPS Technology is a scalable solution if tied into good service provision.
- GPS Technology creates a lot of intelligence.
- GPS can save police time.

Through focused service provision the solution must be:-

- Managed by Exception.
- Proportionate.
- Provide evidence which will withstand scrutiny.
- Scalable.
- Economic.
- Meet the agencies needs.

finishing thought...

- GPS Technology is a great way of capturing a large amount of intelligence.
- The Intelligence is how we use this data.

Question & answers...

Any Questions?