Briefing: Microconnect Distributed Antennas (MDA)

As the demand for mobile phone services continues to grow, so does the need to balance technology demands and environmental concerns. Emerging 'third generation' (3G) mobile applications will bring tangible benefits, but some people have concerns about the siting of tall mobile phone masts. Recognising this problem, BT has developed **Microconnect** – an innovative approach utilising existing street furniture to accommodate a shared wireless infrastructure for mobile operators.

What is Microconnect?

Microconnect is a discreet, low power wireless infrastructure that – in line with industry best practice – is designed to carry services from all mobile operators simultaneously. It comprises a series of small antennas installed in existing street furniture such as lampposts and CCTV columns. Microconnect is particularly suited to busy urban areas and heritage cities where mobile coverage and capacity can be impaired. It is future proof, with the flexibility to respond to both GSM (2G and 2.5G) and 3G network requirements of mobile operators.

A catalyst for investment

Quality mobile coverage and choice are becoming increasingly important. According to analysts at Analysys, the number of UK subscribers to advanced mobile services will grow by over 250% between 2004 and 2009. The existence of a good communications infrastructure is essential to employers looking to locate in a region and Microconnect can help stimulate inward investment by facilitating uniform mobile coverage.

Community benefits

3G applications will help narrow the digital divide through enabling relatively low-cost and simplified access to broadband internet services. 3G applications will also encourage social inclusion and widen consumer choice by increasing communication about products, services, activities and facilities in the community in an increasingly relevant manner.

Low environmental impact

A key feature of Microconnect is its low environmental impact – the infrastructure has been designed to minimise visual intrusion in city centres and areas of natural beauty. In line with industry best practice, Microconnect can carry services from all mobile operators simultaneously, thereby reducing the need for multiple structures to be built.

The antenna is the small (15cm), cylindrical-shaped object on the top of the lamp post. A remote unit is fitted inside the lamp post column to accommodate both radio signals and lighting.

A low power solution

Microconnect operates at very low power. An individual antenna operates at just two watts, about the same power output as a mobile phone. Even at full capacity – with several mobile operators using the same network – the power output is just six watts, resulting in exposure at street level between a thousand and a million times below that of a mobile phone, and over 100 times below the established guidelines set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The ICNIRP guidelines – recognised as a standard for safety by the World Health Organisation – are designed to protect everyone and include a large safety margin as a precautionary measure.

Commitment to public consultation

BT advocates a consultative partnership approach to introducing Microconnect, working with local authorities and mobile operators to deliver the best results. Our policy is to ensure that the sites for each antenna are chosen with care and consideration for the local community. BT is committed to industry best practice and subscribes to the mobile operators' Ten Commitments and Traffic Light Rating for public consultation.

All Microconnect sites will be clearly labelled when they are introduced with a dedicated enquiry telephone line (0800 389 3108). The location of our antennas will also be available on the Office of Communications (OFCOM) mast site database. The site is regularly updated and available to the public (www.sitefinder.radio.gov.uk).

How does Microconnect work?

Microconnect operates by utilising BT's UK-wide fibre optical network. Mobile phone operators locate their base station equipment for 2G, 2.5G or 3G systems in a BT telephone exchange and are connected to lampposts, CCTV camera columns and street signs via existing underground fibre cable runs. This means that the 'street'

system is future-proofed and capacity upgrades to enable more mobile phone users to make calls or use new services can be done remotely without the need for further equipment to be installed at street level.

Where has Microconnect been introduced?

Earlier this year, Chester City Council and Cheshire County Council signed a partnership deal to enable BT to place the antennas on existing street signs, lamp posts and CCTV poles. BT is working closely with the councils and mobile operators to determine a coverage plan for the city and hopes to have rolled out Microconnect by the end of 2004.

In March, Cardiff Council also signed a partnership agreement following a successful trial in the city. BT is currently in discussions with a number of councils across the UK regarding similar agreements to those made with Chester and Cardiff, and hopes to agree a number of partnerships within the next few months.

What do other local authorities say about Microconnect?

Chester City Council

"We fully support this innovative project, which is ideally suited to a heritage city. The shared use of discreet antennas by different mobile phone companies will help minimise the number of transmitter sites needed to satisfy the ever increasing demand for mobile communications in this thriving city."

Councillor Steve Davies, Cabinet member for ICT and E-government, Chester City Council

CHESHIRE COUNTY COUNCIL

"This partnership offers the best of all worlds. It will help BT to meet the needs of businesses and should help attract more businesses to this part of Cheshire – without compromising best practice environmental health guidelines."

Councillor Eveleigh Moore Dutton, Executive member for ICT and Communications, Cheshire County Council

"If Cardiff wants to achieve its ambition to be a world class city then it needs world class facilities and the distributed antenna system is exactly the sort of project that we need to equip Cardiff with the infrastructure that it needs to perform on behalf of Wales."

Councillor Russell Goodway, Leader, Cardiff Council

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