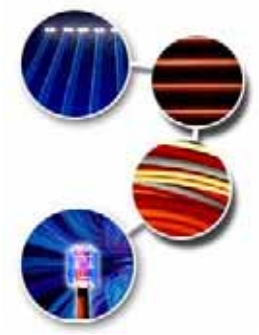
Networks

Organisations need to ensure that data traffic is carried seamlessly and securely, from the point of access to the location of the users and systems. There are several broad choices available when considering network implementation:

- CAT 5e/6 structured Ethernet cabling and cabinets
- WiFi 802.11B and G
- Line of sight (LOS) radio links
- Non-line of sight radio links (NLOS) and WiMax

Structured Cabling – Local Area Networks



AfriConnect can design and install structured cable networks based on the specific needs of your organisation. When installing or upgrading fixed infrastructure an audit is carried out on existing:

- Cabling (including fibre)
- Switches
- Routers
- Firewalls
- Protocols and procedures

New CAT5e cable (EIA/TIA-568) to support 100Mbit Ethernet over distances of to 100m, or CAT6 cabling to the ANTSI /EIA 568 B-2.1 standard which supports 1000Mbit Ethernet over distances of up to 100m would be installed with ancillary equipment specified in accordance with client applications.

Full AT&T standard wiring diagrams are then prepared to support the installation, and maintenance or support contracts to ensure continued reliability as the network grows are part of the turnkey installation.

Wireless – Local Area Networks (LAN)

In some cases, perhaps where an organisation has taken over an old building or where shared cable ducts make running new Ethernet cable a financially unviable choice, wireless LANs can be deployed instead.

An additional advantage of having no fixed cabling is a flexible desk arrangement in your office(s), and the means to easily accommodate users who operate from more than one office location.

Desktop PCs can be fitted with wireless cards instead of or in addition to Ethernet cards. Laptops can either use external antennas, PCMCIA cards, or as on later models, the WiFi functionality built-in by the manufacturer before shipping.

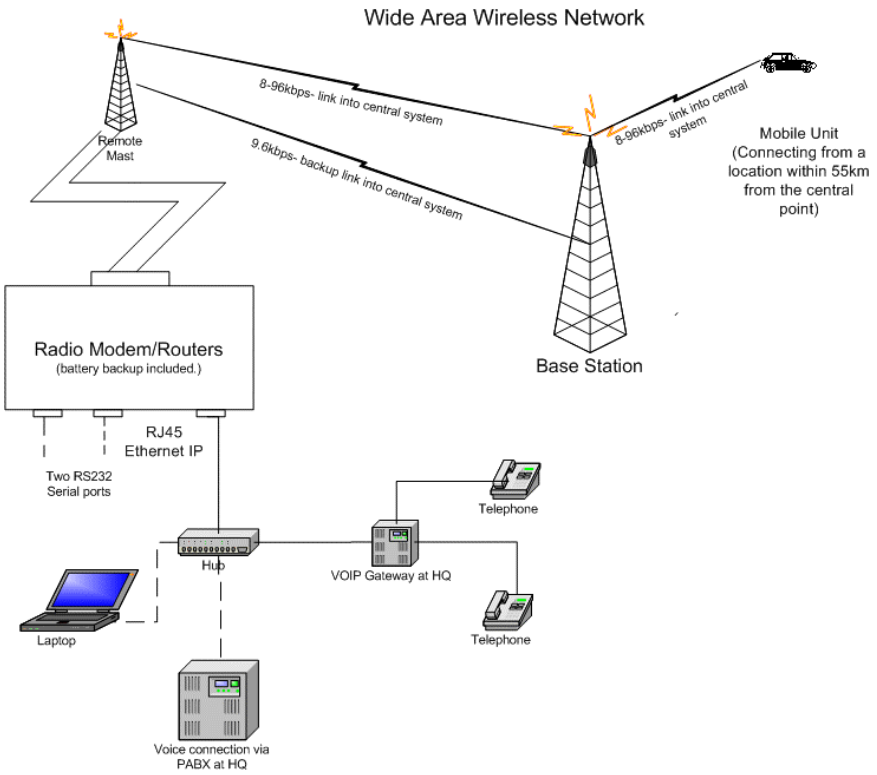
Organisations must be careful when deploying wireless technology to ensure that network security is maintained. Password protection and processes to ensure that these passwords remain confidential are essential. Data can also be encrypted for further security.

Wireless – Wide Area Network (WAN)

For organisations which have local offices grouped around a main location, then wireless line of sight (LOS), can be used to extend the network from a principal site to others.

Radio links carry the data traffic from point to point and can be used over any line-of-sight link typically of less than 35Km, but limited by the permissible size of antennas and towers.

These links carry all the data (and voice) traffic between the central access site and all distant offices. Links must therefore high bandwidth and a minimum of 34Mbits or higher would normally be deployed to ensure that the end-user experience did not suffer from bottlenecks or congestion cased by this extension to the LAN.



Small parabolic antennas are used on the building(s) at the remote sites to receive and transmit traffic. In this way organisations can minimise the number of connections that they have to external telcos and ISP's enabling them to improve security and manage costs.

Non Line Of Sight Wireless – Wide Area Network (WAN)

For locations where broadband connectivity is required by hundreds or thousands of end-users, non-line-of-sight wireless technology can be deployed.

These systems use large towers to cover many square kilometres of a town or city, and can provide links speeds of around 6Mbits, although this bandwidth would normally be shared among many users.

Small customer premise equipment (CPE) is then used to achieve a public broadband wireless network. These systems are typically deployed by Internet Service Providers (ISP) to extend their coverage to areas where telephone lines and exchanges are poor.