

Distributed Antenna System (DAS) Key Terms

From DASPEDIA with edits

Antenna - AWS - Advanced Wireless Services - Wireless spectrum band used to transmit data and voice services. It uses frequencies 1700 MHz for uplink and 2100 MHz for downlink

BBU - Baseband Unit - The part of a telecomm processing unit that processes the baseband portion of a signal

BDA - Bi-Directional Amplifier - BDA's boost wireless cellular signals and are commonly used as part of over-the-air DAS systems deployed in smaller venues

BTS - Base Transceiver Station - A high power radio-frequency station deployed by carriers for iDAS and oDAS installations

C-RAN - Centralized Radio Access Network - Cloud (sometimes referred as Centralized) RAN designed to overcome capacity issues of traditional network. Concept includes centralized deployment, cloud, collaboration of different radio technologies such as macro, small cell, das, etc...

CDMA - Code Division Multiple Access - The CDMA air interface is used in both 2G and 3G networks. It's a "spread spectrum" technology, allowing many users to occupy the same time and frequency allocations in a given band/space. (Source: www.cdg.org)

COW - Cell on Wheels - A mobile cell site designed to increase existing cellular capacity during a large event like an outdoor concert

CWDM - Coarse Wave Division Multiplexing - An optical technology that typically allows up to eight separate signals over a single strand of fiber optic cable using different wavelengths. This technology is useful in linking DAS Head-Ends with a BTS hotel location

DAS - Distributed Antenna System - DAS is a network of antennas designed to provide coverage (wireless signals) to an area with little or no otherwise coverage. This could be inside a building or a small defined geographic region.

DL - Downlink - Downlink describes the direction of traffic from BTS & DAS Head-Ends to a user's handset or portable device

DWDM - Dense Wave Division Multiplexing - An optical technology that allows for more than eight separate signals over a single strand of fiber optic cable. It is usually reserved for digital data transmission.

eNB - Evolved Node B - An Advanced Base Transceiver Station (BTS) with an integrated controller, allowing for faster response times

ERAN - Enterprise Radio Access Network - RAN consists of small cell network platform used to densify carrier networks

FDD - Frequency Division Duplex - FDD requires two separate communications channels. Most cell-phone systems use FDD. The newer LTE and 4G systems use FDD. Cable TV systems are fully FDD. (Source: Electronic Design)

GSM - Global System for Mobile Communications - It's a cellular technology used to transmit voice and data. GSM operates in the 900MHz and 1.8GHz bands in Europe and the 1.9GHz and 850MHz bands in the US. (Source: www.gsma.com)

HetNet - Heterogeneous Network - A system of network coverage consisting of many components, possibly including macrocells, small cells, oDAS and iDAS. A HetNet is designed to increase network density and add capacity for better user experience in a given area such as a city center

HSPA - High Speed Packet data Access - It's an upgrade to WCDMA networks (both FDD, and TDD) used to increase packet data performance (Source: www.3gpp.org)

ICI- Inter Cell Interference - Common issue experienced by LTE deployments. Neighboring cells are using same frequency channels thus causing interference issues.

iDAS - Indoor Distributed Antenna System - DAS deployed in an indoor setting

LTE - Long Term Evolution - High speed wireless data network and standard

LTE U - Advanced LTE Unlicensed - Describes Advanced LTE deployments in unlicensed spectrum such as 5 GHz range

LTE-A - LTE Advanced - Faster LTE network that uses MIMO

MCO - Metro Cell Outdoor - A LTE node manufactured by Alcatel Lucent and deployed as a Small Cell. MCO can be used both in and outdoors

MIMO - Multiple In Multiple Out - MIMO is a technology that accelerates data transfer, spreading transmission power over multiple antennas instead of only one (SISO)

mRBS - Micro Radio Base Station - A low-power base station manufactured by Ericsson and deployed as an element of Small Cell infrastructure. mRBS is connected to a wireless carrier's central office via an Ethernet connection

MRO - Metro Radio Outdoor - A radio node manufactured by Alcatel Lucent and deployed as a Small Cell. MRO can be used both in and outdoors. It has built-in baseband unit that does CPRI to RF and RF to CPRI conversion.

mRRUS - Micro Remote Radio Unit - A remote low-power radio node manufactured by Ericsson. mRRUS are deployed as an element of Small Cell infrastructure. mRRUS is connected to a digital radio base station using CPRI protocol

NF - Noise Figure - A figure used by RF engineers to determine the degradation in the signal-to-noise ratio in a wireless network, measured in decibels (dB). Lower NF values indicate a highly performing network. This is especially true for LTE

oDAS - Outdoor Distributed Antenna System - DAS Deployed in an outdoor setting

PIM - Passive Intermodulation - PIM occurs when passive components such as duplexers and couplers are used to channel multiple wireless signals. Lower PIM ratings indicate an overall high quality network. PIM is tested and measured in dBc (decibels relative to the carrier). Measurements below -150 dBc are considered low, although some carriers now require passive components to be rated in the -160 dBc range

PoE - Power over Ethernet - Low voltage power transmission using traditional Ethernet cables like RJ45 or Cat5

RAN - Radio Access Network - The portion of a cellular network which includes a BTS. It allows users to access the core networks of wireless carriers

RRH - Remote Radio Head - A radio control panel connecting to a remote radio receiver

RRU - Remote Radio Unit - A radio node deployed as part of an iDAS infrastructure. RRUs are usually connected with a DAS Head-End via fiber optic cable. Each DAS Head-End can support multiple RRUs depending on the installation type

RSRP - Reference Signal Received Power - RSRP is the linear average of reference signal power (in Watts) across the specified bandwidth (in number of REs). This is the most important item UE has to measure for cell selection, reselection and handover. (*Source: www.sharetechnote.com*)

SE - Spectral Efficiency - SE measures how densely channels can be packed into a frequency spectrum. Higher density means more information can be transmitted. Also known as spectrum or bandwidth efficiency

SFP - Small Form Pluggable Transceiver - An optical transceiver used to transmit digital wireless data over a fiber optic network

SINR - Signal to Interference plus Noise Ratio - A ratio used by wireless RF engineers to determine the quality of a wireless network. It relates a particular transmitter antenna's signal power to the total power received by all receiver antennas in the system with the noise in the system

SISO - Single In Single Out - SISO is a type of antenna configuration using only one antenna, as opposed to MIMO, which uses several antennas and is faster

Small Cell - Small Cell - A network of radio access nodes designed to increase the density of a wireless network Enclosures are typically no larger than 17 cubic feet, with antennas no taller than 3 feet. Range is generally from 10 to several hundred meters. Examples of small cell equipment includes MRO, MCO, mRRUS and mRBS

SON - Self Organizing Networks - SON solutions can be divided into three categories: Self-Configuration, Self-Optimisation and Self-Healing. The SON architecture can be a centralized, distributed or a hybrid solution (Source: www.3GPP.org)

TDD - Time Division Duplex - TDD uses a single frequency band for both transmit and receive. Then it shares that band by assigning alternating time slots to transmit and receive operations.

UL - Uplink - Uplink describes the direction of communication from a user's handset to a DAS Head-End or BTS

WDM - Wave Division Multiplexing - An optical technology that allows for the transmission of two separate signals over a single strand of fiber optic cable. In iDAS and oDAS environments, such technology is usually used to optically connect a DAS Head-End with a Remote Unit

WLAN - Wireless Local Access Network - Network that links two or more devices using wireless methods. Usually covers relatively small area and typically accessed via WiFi but other methods are available.