

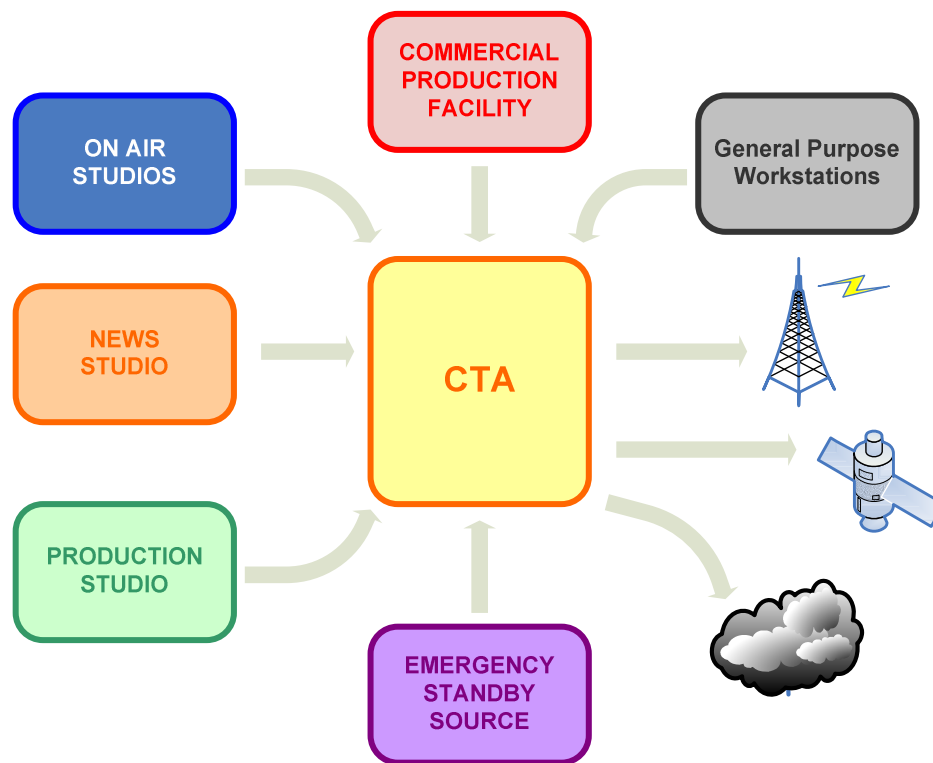


### The CTA (Central Technical Area)

The Central Technical Area is where 'shared' equipment is located, common to all technical areas. It does not need to be an acoustically treated area, but ideally should be air-conditioned, though this need not be to the same low-noise specification as the on-air studios.

The CTA also serves as the interconnection point for the various technical areas within a station – studios and workstations, and as the interface between the station and the outside world.

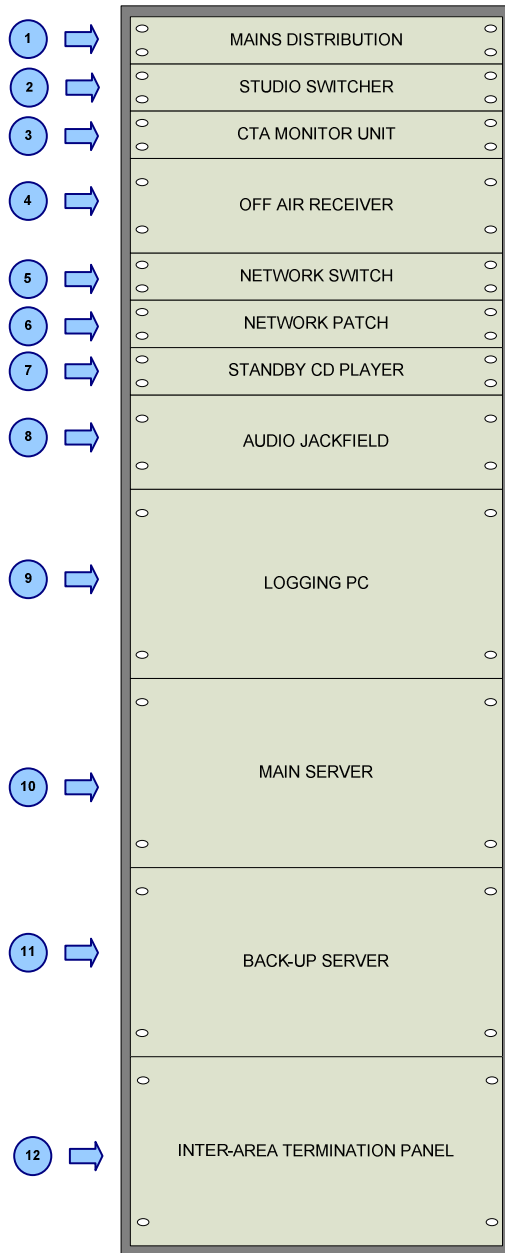
This is shown diagrammatically below.



Any installation where there is more than one studio needs some shared equipment, and it is preferable that this is housed in a separate area, the CTA. In some circumstances, it may be possible to house the shared equipment in a rack within a studio, but this will restrict access for maintenance etc, and is only really recommended as a last resort.

The CTA equipment is generally mounted in a standard 19" equipment rack, which is often also used to terminate inter-area cables, the connectivity between studios and workstations. The CTA often contains equipment racks which house other shared equipment – not related to the studios – such as IT servers, PABX and so on.

The diagram below shows the layout for a typical CTA 'rack'. This accepts equipment referred to as 19" rack-mounting – which means that it will fit neatly into the same sized cabinet. The rack itself is about 600mm wide, 800mm deep and varies in height according to the amount of equipment.


**1**

### Mains Distribution Unit (MDU)

Given the mission-critical nature of the CTA, it is important that if any single item of equipment develops a fault and blows a fuse it is immediately obvious which item it is and that it is easy to replace the fuse.

Clyde's MDU12, used in all of our Packages requiring a CTA, has a single mains input cable (rated at 16Amps), and 12 individually fused IEC outlets, for powering external equipment.

Each outlet has a fuse which is accessible from the front-panel, each with two indicators - a green LED showing that mains is present on the output connector and a red LED showing that the output fuse has blown.

**2**

### Studio Switcher

The function of the studio switcher is to allow selection of which studio, or other source, is sent to the station output – whether this is sent to a transmitter, STL or streaming PC.

Clyde Packages are based around two options, a basic manually operated passive selector, or a more sophisticated remotely controllable system.

The basic unit, the Clyde TSM1, consists of a rotary switch, mounted on a panel in the CTA, which selects between studios – with the capability to select between 4 different sources.

**3**

### CTA Monitor Unit

This allows an engineer or technician to switch between the various studio outputs, the station output and a feed from the off-air receiver. Most monitor units contain a pair of meters, for checking signal levels, and an output to drive loudspeakers. Some units contain a talkback interface, allowing communication with other areas.

Clyde's TSM1 is a combination Switcher and Monitor Unit – a single low cost and very compact solution.

**4**

### Off Air Receiver

This is essentially an FM/AM radio receiver (also referred to as a 'tuner'), normally tuned to the station's broadcast frequency. It is used to send an off-air (i.e. transmitted signal) around the station, so that any transmission problems can be identified as quickly as possible.

**5**

### Network Switch

This is a standard piece of IT equipment, providing multiple access for network connected devices, such as PCs, servers and printers etc. In this instance, it is used to interconnect PCs in studios and workstations with the server.

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#### **Network Patch**

This is also a standard piece of IT equipment, used to allow 'over-patching' between network connected devices. It is normally supplied with a bundle of CAT5 or CAT6 jumpers, plugged up to obtain the 'standard' or default connections.

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#### **Standby CD Player**

This is an option used in conjunction with the studio switcher, as the emergency broadcast source.

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#### **Audio Jackfield**

This provides access to key points in the broadcast chain, and allows equipment to be bypassed, in the event of failure.

The normal configuration is two rows of 20 or 24 jacks, wired to the 'half-normalled' standard.

This minimises the need for external jumpers, under normal operating conditions, and allows a 'listen' of a source to be taken from the upper jack, and a 'break' into the destination feed by inserting a jack in the lower position.

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#### **Logging PC**

In certain countries it is mandatory to record the broadcast output and retain this for a period of days, weeks or even months. Such recordings are generally made at a low resolution, as their main purpose is to act as proof of broadcast for advertisers, or in the event of complaints to the station about inappropriate content.

A Logger is an option in all Clyde Packages, and the hardware is based on a PC from a Tier One manufacturer.

The output from the PC may be auditioned via the CTA monitor, and material can either be transferred across the broadcast network, or burnt to CD from the unit's internal CD writer.

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#### **Back-Up Server**

A further option for systems deploying servers is to install a back-up. Using Clyde's auto-back-up software, a copy is made of all material sent to the Main Server.

Should the Main Server fail, a simple re-patching exercise is all that is needed to bring the Back-up on-line.

If the failure occurs when the station is unattended, the Emergency CD-payer will kick in, maintaining continuous broadcast until an engineer can attend.

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#### **Inter-area Termination Panel**

Clyde use either Krone insulation displacement connectors for inter-area connectivity.

Krone 'blocks' are generally mounted at the rear of the rack, and audio cables to/from remote locations are terminated onto blocks, as are connections from all equipment in the CTA rack.

'Jumper' cables, inserted into and between the various circuits terminated on the blocks are used to obtain the requisite system connectivity.

This provides an easy means of adding equipment or re-configuring connectivity as and when (inevitably) operational requirements change. Clyde use a bespoke software package, KRIS, to record as-installed jumper information.

Alternatively, to minimise installation time, in simpler stations, it is possible to use standard computer CAT5 cables between areas, and in these circumstances Clyde supply connector panels in each technical area, so that the station can be almost 'plugged together', a task which can often be accomplished without the need for Clyde staff to attend.

#### **ADDITIONAL EQUIPMENT**

The CTA may also contain other 'shared' equipment, such as ISDN codecs, used to link the station via digital connectivity to other similarly equipped locations, and telephone balance units or station-wide broadcast phone-in equipment.

In larger stations there may also be an inter-area 'talkback' system, to allow rapid communication between key operational areas. This normally takes the form of a master unit (located in the CTA) and local control panels with microphones and loudspeakers in each studio.

Studio to Transmitter Link equipment will also be housed in the CTA, to connect the station output to the transmitter(s) or streaming host.

There are a variety of STL options – refer to the Clyde Technical Bulletin – 'Reaching the Transmitter'.

Often the CTA will also accommodate IT equipment associated with the station's office network, as well as the PABX equipment for the office phone system.

Clyde strongly recommend the use of Uninterruptable Power Supplies (UPS's) in main on-air studios and the CTA, particularly in areas where power-outages are common.

Clyde staff will be pleased to advise on power requirements, earthing policies, state-of-site readiness for installation and many other aspects associated with installing your station, interfacing to other disciplines and getting you on air.