

Remote Broadcasts

There are a number of obstacles we can encounter when trying to accomplish a remote or outside broadcast. Before we look at doing a remote, we need to decide what we are trying to achieve. OB's can be full on stereo remote broadcasts or simple voice reporting. It can be as simple as a quick link to the patients or to bring a full show from an external event to the listener. The first obstacle is location. Depending on where we hope to broadcast from will also affect what is available to use technically. A basic telephone line, WiFi, ISDN, ADSL, wireless can all be used to bring our remote back to the studio, so when on location find out what can be used. The other prominent obstacle is equipment. Equipment can only be used if we have the ability to connect back to the studio. And limited connectivity can also affect quality. So what can we use?

ISDN. For many years ISDN (digital telephone line) was used extensively by radio stations to do remotes. It is still used extensively today for sports commentaries, Voice-Over sessions and full broadcast quality stereo programme remotes. ISDN lines are expensive and a temporary ISDN line may need to be installed at the remote location by BT adding to cost. The equipment is also expensive. A Glensound™ ISDN mixer with headsets can cost £3500 for sports/news reporting. The studio equipment will be a similar price. Certainly out of the budget of most hospital radio stations and not cost effective.

Telephone/POTS. A standard telephone is the easiest way to connect to the studio. Very fast, simple and effective. Great for short items but not very good for long broadcasts due to the audio quality. Similar to ISDN, digital equipment that uses Plain Old Telephone System (POTS) have been used with good effect. A Comrex™ system converts analogue audio to a digital signal similar to ISDN units, but sends this digital noise down an ordinary telephone line. These units rely on a good quality telephone connection but good results can be found.

ADSL/Broadband. Having Broadband Internet connection can open up a whole new world. Quality depends on what you use to connect remote to studio. The quality of connection will also depend on if the remote end is using a hardwire connection or **WiFi** connection.

Assuming we have a good ADSL connection at each end, Skype™ or similar voice over ip (Voip) can produce adequate results for voice only remotes. Some hospitals now have free WiFi available and allow Skype™ to be used.

Other types of connectivity can be used. Fideliphone® is free to download and use (although no longer supported) and is excellent in quality. It is a peer to peer connection that can be used as stereo or mono although delay may affect its practical use for OB's.

ipDTL™ uses Google Chrome® as it's platform. Again this can be used wherever an internet connection is available. They offer a low bandwidth "free" service for hospital radio stations and a higher quality connection can be found with the subscription version. Although ipDTL™ advertise ISDN style quality with low delay, I have not found this during trials I conducted using the free service.

Similar to the old POTS and ISDN systems, the companies that made the equipment have now ventured into the internet market and have produced very similar ISDN/POTS kit that now works via a broadband connection. Some also offer a PC to PC style system utilising tablets or laptops to connect to a studio PC.

UHF Radio Links. Some established ILR radio stations still use the UHF radio link (radio car). For hospital radio stations, there is still part of the UHF radio spectrum that can be used without the need of a licence in the UK. Although not guaranteed against interference, UHF channel 70 equipment is readily available for close links (or linking into other equipment to broadcast back to the studio). Although these

frequencies were once near the analogue UHF TV band, they are now part of the new G4 mobile phone network and so interference can result. Arqiva™ have recently taken over the administration of licensing programme making radio links (including radio mics and In Ear monitoring). Special permission may be required for use at large events or some geographic areas of the UK.

Fixed Landline. The best quality would come from a fixed line between the studio and remote. If you have a cable feeding the main hospital system, why not put in another cable so you can connect from the hospital back to the studio? These are known as Tie-Lines and can be a point of reference for other equipment to connect to for your remote.

Delay also known as latency. Delay exists with all forms of transmission. This can be so slight that you will not notice. Longer forms of delay can be caused by digital equipment. Any form of converting an analogue signal to digital also needs to be converted back from digital into an analogue signal for us to hear. CODECS are used to do this conversion process and all will incur some delay. Some are better than others with handling/converting audio signals and so some systems will incur more delay than others. Skype has a low latency whereas Fideliphone® can have a delay of 3 seconds or more depending on the route it takes. ISDN in G722 mode will have less delay (and audio bandwidth) than stereo MPEGII mode. So we have to be careful what system we can use to prevent the difficulty of a presenter talking to the remote end.

Cleanfeed. Most remotes would need to hear station output so they can hear what is being broadcast but it can be very difficult (especially with delay) to hear their voices back again. Because of this we need to supply the remote end with a cleanfeed.

A cleanfeed is the output of the desk without the remote channel, and so eliminating the remote end hearing their voice being broadcast back to them. Cleanfeeds can be arranged by sending some channels to the remote equipment using an AUX channel or it can be arranged electronically by Mix-Minus. Mix-Minus is an electronic way of feeding the remote equipment with desk output without the remote signal – and so the remote end should hear all of the desk output, minus the remote signal.

Talkback (IFB). It is helpful for the studio to be able to talk to the remote end without broadcasting on air. Talkback is used to speak to the remote end and so messages or direction can be sent to the remote end. This can be either “open talkback” (a permanent on talkback circuit that is mostly used for TV) or ordinary talkback which is programme output broken by talkback by depressing a button.

Four Wire. The old style of remote broadcasting before the invention of digital circuits was known as Four Wire circuit. Some of today’s modern digital remote systems still use these basic principles. The four channels used provided Programme, Programme Return, Cue and Reverse Cue.

Conclusion.

There are ways and means to bring a remote event to our listeners but with some obstacles. The points to remember are how simple or complicated the OB can be and the quality of the sound. Quick links can be achieved with telephone/smartphone technology. Better quality with talkback would be wanted for full programmes being broadcast from the remote site (although music etc. would be played in from the studio).

Remember if using equipment within the hospital (particularly wireless/radio equipment) to get clearance from the hospital.