With many events considering adding live broadcasts to reach users and speakers that are unable to get to the venues we (venue members of the Cross-Association Technology Working Group) have put together some basic points to consider to ensure you are able to stream your broadcast successfully.

The million-dollar question is how much bandwidth is required?

As there is not one answer this will depend on the quality of the stream, the encoding settings etc.

Streaming requires **bandwidth upload**. Most providers have higher download rates than uploads, make sure you use the right definition to secure your connection.

Video content will need to be compressed to ensure a reliable broadcast to viewers. This process is also referred to as **encoding**. The compressed video and audio content processed over a set time is called **bit rate**. Whilst a higher bit rate usually represents higher quality it may make it unreliable for viewers if they don't have a network offering similar speeds or greater.

The guide below will help you estimate the bit rate you will need:

0.5	1.5	3.0	5.0	25
Megabits per second	Megabits per second	Megabits per second	Megabits per second	Megabits per second
Minimum bandwidth required for live streaming	Minimum bandwidth required for a broadband connection	Standard definition (SD) bandwidth	High definition (HD) bandwidth	Ultra HD (4K UHD) bandwidth

If you have a 5Mbps upload speed ensure your stream bit rate **is less than 5Mbps**.

To find out the bandwidth required for your stream you can use this simple formula:
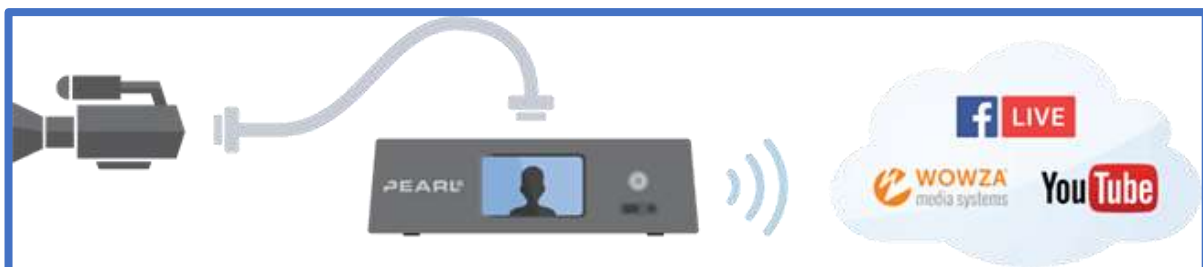

Where possible opt for the most reliable connectivity - Cable

When choosing your speed consider the term Max speed.

If you are you are broadcasting to more than one Content Distribution Network (CDN) it is

essential that you understand how each additional broadcast adds to the total outgoing bit rate and will require additional upload bandwidth capacity.

You are now aware of the various factors affecting the bandwidth speed you will require for your streaming. The venue IT department and your technical contractor will be able to offer more bespoke advice.