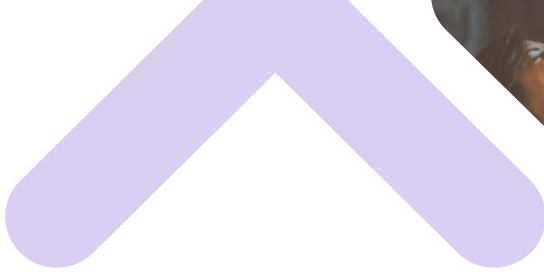


MediaKind

Contribution Portfolio

MediaKind's Contribution portfolio enables live events to be captured reliably, cost effectively, with the highest quality and lowest latency. It supports UHD HDR, the latest IP standards, and delivers remote/at-home production applications.



MediaKind's innovative Contribution & Distribution portfolio enables content providers, broadcasters, operators and service providers to securely and reliably acquire, backhaul, and distribute the highest quality content anywhere, which ensures viewers around the world never miss a minute of the action.

Live events, particularly sports events, deliver some of the highest TV audience figures, and today, with the ability to watch live events on more devices and in an increasing number of locations, the demand for such coverage is still growing. This is further amplified by the ease with which a globally dispersed audience can now be reached via streaming services, meaning that live coverage of even niche sports events can now be economically viable. Therefore, the challenge is how to acquire compelling live events content, in the required quality -

which today increasingly means UHD and High Dynamic Range (HDR) - and at a cost that makes commercial sense.

MediaKind has a long history of providing solutions for the live contribution market, from the very start of digital satellite news gathering. MediaKind's Contribution portfolio enables the latest generation for high quality, low latency HD and UHD contribution links - including support for high dynamic range - and enabling the transition to all IP based workflows.

Market challenges

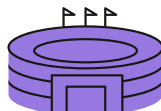
The desire for live events coverage, particularly of sports is not diminishing, and the ability to consume this content on more devices and in higher quality, such as UHD HDR, is increasing the demand. However, the revenues of TV operators, broadcasters and content owners/rights holders, whether derived from subscriptions or advertising, are not increasing at the same rate, hence there are pressures to reduce the cost of acquiring this content, as well as further demands to reduce the environmental impact of live events production.

These market challenges can be translated into the very real need for more flexible contribution solutions covering an increasing number of use cases and applications, remote/at-home production techniques, transition to IP workflows and also contribution workflows leveraging the cloud.

Reduce cost



Cover more live events



Reduce environmental impact



Portfolio applications and values

MediaKind's Contribution portfolio addresses a number of different live content contribution use cases and applications with distinct values enabling content providers/owners, Broadcasters and TV Operators to maximize their investment whilst maintaining the quality and low latencies required for professional media delivery.

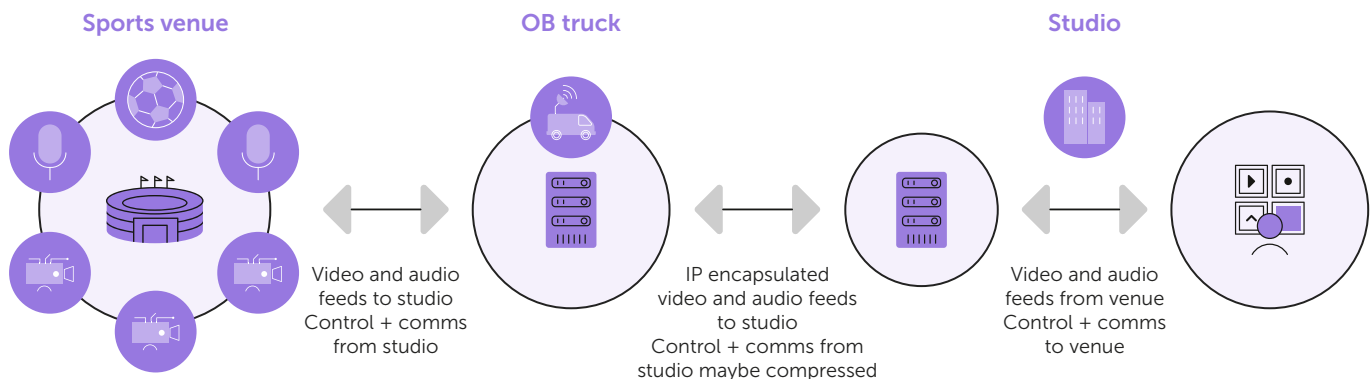
Remote/at-home production application

Remote/at-home production techniques minimize the cost of live events coverage by reducing the amount of equipment and number of people that must be transported to and from a venue. The fact that people and equipment are not spending significant amounts of time in transit can also enable additional benefits such as increased utilization of highly skilled people and expensive equipment. They may, for example, be able to cover more than a single game during a day.

There are challenges associated with remote/at-home production regarding how to maintain synchronization between all the video, audio and metadata feeds, minimizing the transmission latency between the venue and the production facility, and the transmission bandwidth required to deliver the feeds to and from a venue.

MediaKind's Contribution portfolio takes a very simple and reliable, approach to the synchronization challenge. Rather than relying on complex feedback mechanisms and embedded metadata, the Contribution portfolio simply provides modes which align the end-to-end latency throughout the encode/decode chain, in order that the timing relationship between the feeds is maintained from the input of the encoders to the output of the receivers. Additionally, the market leading encoding density and picture quality enabled by the Contribution portfolio - incorporating 4 UHD or 16 HD HEVC encodes per 1RU unit - make it a very compact solution for remote/at-home production applications.

Typical Remote/At-Home Production workflow



Flexible and adaptable architecture

Live events coverage is often delivered by service providers rather than the broadcasters or content owners themselves. Therefore, the flexibility of any equipment or solution for use in many different applications and use cases is very important in order to maximize its utilization and, in turn, its return on investment. It is also important to consider the very real need of providing both HD or UHD particularly whilst the industry is still transitioning between the quality resolutions.

MediaKind's Contribution portfolio is designed around

Investing in MediaKind's Contribution portfolio means high performance and an adaptable solution capable of addressing many different use cases, and therefore maximizing the return on investment.

flexible components that can support HD or UHD, 4:2:2 10 bit or 4:2:0 8 bit, MPEG- 4 AVC or HEVC, SDI or ASI interfaces and the latest IP standards such as SMPTE ST 2110. This flexibility means that the options within the solution enable the platform to grow and adapt with the rate of the business and demand.

A real world example of this flexibility would be where an operator needs to deliver a 16HD Remote / At Home production application one day and then a mixed UHD and HD event the next day.

Transition to all IP workflows

Moving away from application specific interfaces such as SDI or ASI to an all IP workflow can potentially provide several benefits. One that is often cited is cost saving through the use of Commercial off-the-shelf (COTS) hardware, but, in reality, the cost of replacing all equipment in the production chain is unlikely to directly deliver a cost saving. The cost savings are more likely to be delivered from the increased flexibility and adaptability of such solutions once implemented.

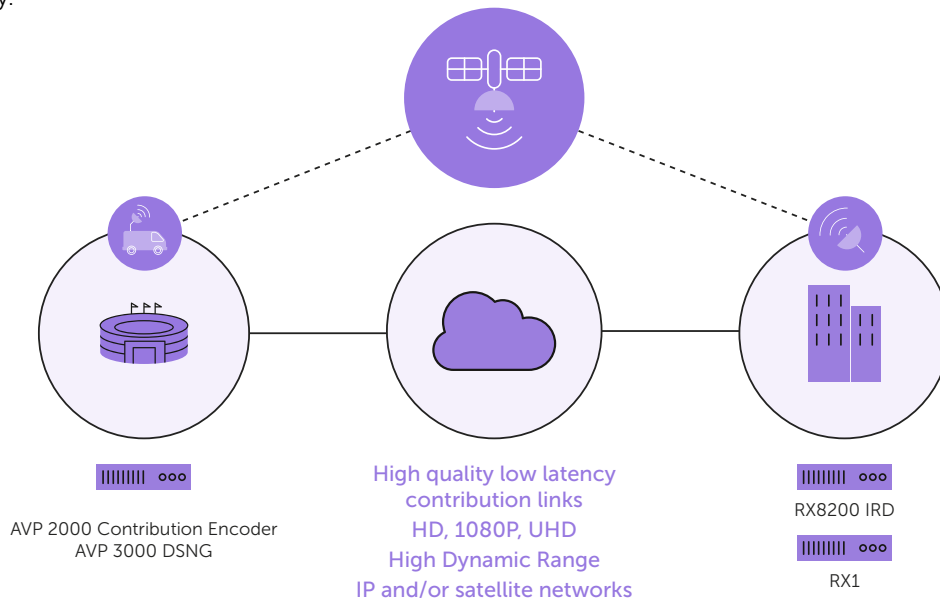
Also, if the functionality is predominantly software based, a future proof platform is enabled.

MediaKind's Contribution portfolio supports the latest IP standards such as SMPTE ST 2110 for ingest and egress whilst retaining support for the established application specific interfaces such as SDI and ASI, thus assisting organisations to migrate to all IP workflows at the rate that their workflow operations and business dictates.

Contribution to the cloud

Once the transition to IP based connectivity has been successful, the door is opened to cloud based processing for production, storage and delivery, which can be attractive for time limited and ad-hoc events rather than 24/7 operations. This means that expensive equipment is not idle for the majority of the time, when cloud based computing resources can be instantiated and torn down when required. However, to make this viable an operator would need to deliver the high quality content in to the cloud, reliably, and often with minimal latency.

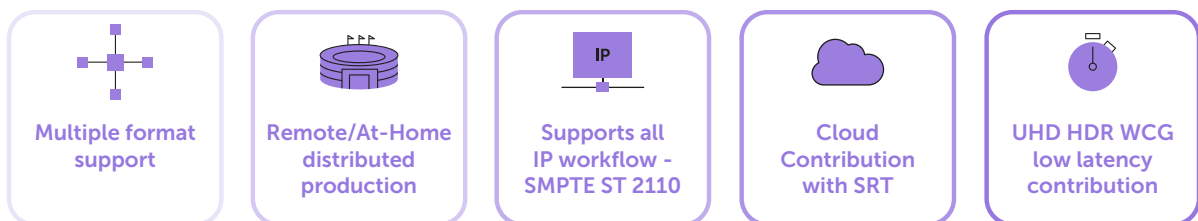
MediaKind's Contribution portfolio can offer SRT (Secure Reliable Transport) to ensure that contribution of content delivered in or out of a cloud architecture over unmanaged IP networks is error free and secure. Utilizing this transport protocol the solution can inherently enable robust delivery over these unmanaged networks meaning additional peace of mind that content integrity remains intact and safe from potential piracy.



MediaKind's Contribution portfolio delivers

MediaKind's Contribution portfolio delivers high quality, low latency contribution links up to UHD HDR. It can support remote/at-home production applications, making UHD contribution cost efficient through the use

of HEVC to reduce the required transmission bandwidths. It also supports the latest IP standards, including SMPTE ST 2110 and the SRT transport protocol enabling both rapid and easy transition to a new cloud architecture.



Whatever your live professional media contribution needs, our Contribution portfolio delivers.



mediakind.com