



# Centralized remote production guide

**Live event programming, across all content types, has grown in recent years, as real-time, non-scripted, shared video experiences are a proven way to grow and increase engagement with an increasingly fragmented audience.**

In the US, the number of people who watch live video content will increase from 136.4 million in 2020 to 154.7 million in 2023.



<https://www.emarketer.com/content/q1-2020-digital-video-trends>

Live event production has historically been almost entirely on-site, with large crews and expensive production trucks deployed at a venue. While there has been a slow and steady effort to evolve this production model for many reasons, the need to change the way events are produced has accelerated in recent months due to travel limitations and social distancing requirements, as a result of Covid-19.

This guide will provide an overview of how centralized and on-site remote productions are defined, organized, and implemented. We'll address some of the questions many content creators and right holders have about how to transition from on-site to centralized remote production. We'll also share a few customer use cases at the end of the guide, to illustrate the LTN Flex solution.

## On-site remote production 101

Most producers are familiar with traditional, on-site remote production workflows, but it's worth taking a moment to review.

Traditional production models require that a large, expensive mobile unit is driven to the venue site. The truck serves as the production control studio, and often requires a large crew of dedicated personnel to set up and produce a show. The complete switched, live production is then delivered via IP transport, fiber or satellite from site to downstream distribution platforms like RSNs, local stations, networks, and digital or social ---destinations.

Mobile units come in various sizes, and the cost of renting one is considerable, and varies widely. In fact, there are many factors that can impact the type of truck required — and the overall cost — for an on-site production:

- Truck size
- Crew needed
- Venue size, age, and infrastructure
- Number of cameras
- Production size and complexity

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## On-site costs add up

Crew cost, which for many productions is 90% freelance, is one of the largest line items on any production budget.

Costs vary for positions such as a technical director, audio engineer, one to three replay operators, graphics operator, graphics coordinator, bug operator, and one or two video engineers. Depending on the location, union requirements, and experience level, hourly rates can vary between \$10 to \$200 per hour, and do not include travel and associated expenses. Additionally, freelance staffing requires hourly minimums.

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## Enter centralized production

Centralized production is the process of bringing audio and video sources back to a centralized studio for live or post-production workflows. This production model is often referred to as at home or REMI production. When produced correctly, the viewer is unable to realize that the production is being produced off-site, at a studio, on the other side of the country, or other side of the world.

## Producer questions, answered

Having worked with many content producers that made the transition to centralized remote productions, we've found that they all have similar questions:

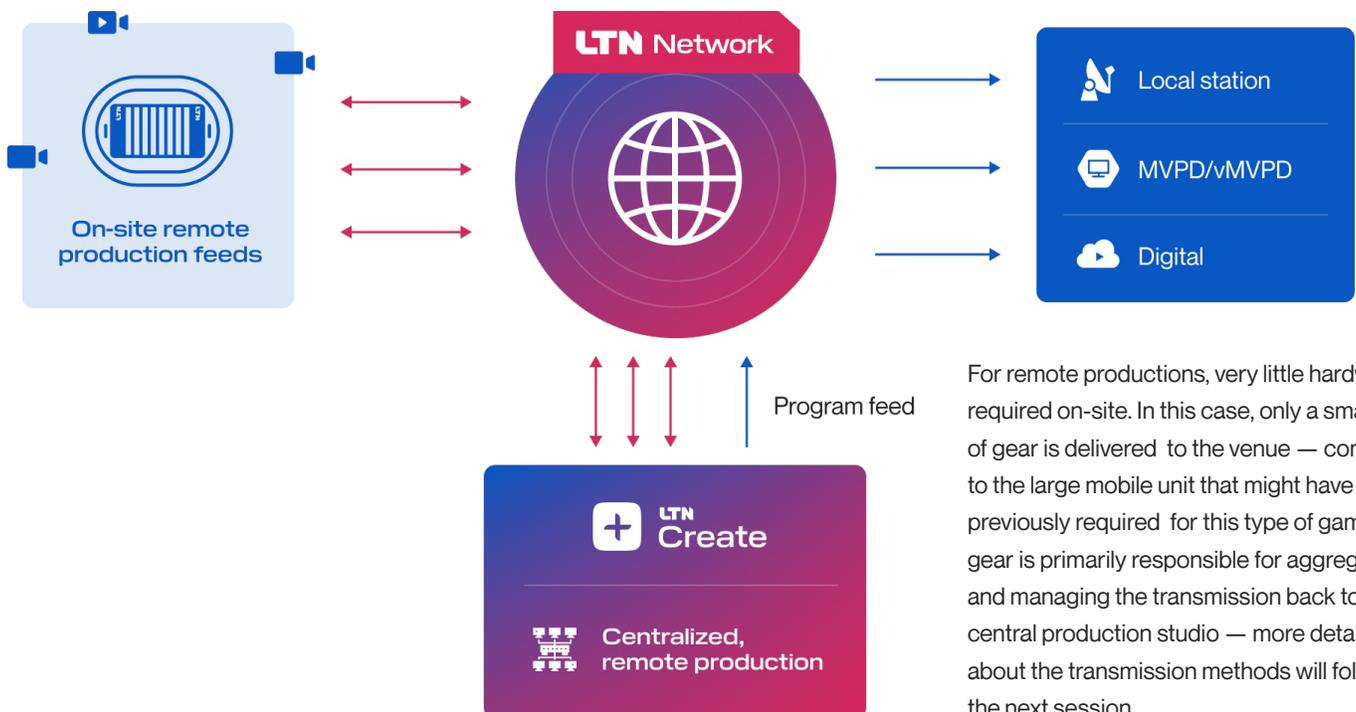
- What are the advantages of a remote production model?
- What are the disadvantages?
- What type of gear is required on-site?
- Which staff will remain on-site? Who will work remotely?
- What are the venue's internet connectivity requirements?
- What are my own internet connectivity requirements?
- How do I mitigate risk?
- How do I determine my remote production budget?
- How much will I save with centralized versus on-site production?

Before we answer these questions, it's critical that you first clearly define your show goals and requirements. Once defined, the answers to many of the above questions will be straightforward.

- What type of production am I planning? Sports? Concert? Corporate event?
- Will the event be distributed live, or aired at a later date?
- Is this a one-off event, or part of a season or series?
- How long is the event?
- Where are my viewers? RSNs? Networks? Local stations? O&O digital platforms? Social?

## Centralized remote production workflow, and savings

The following diagram for a college football game shows a typical centralized remote production model.



For remote productions, very little hardware is required on-site. In this case, only a small rack of gear is delivered to the venue — compared to the large mobile unit that might have been previously required for this type of game. The gear is primarily responsible for aggregating and managing the transmission back to the central production studio — more details about the transmission methods will follow in the next session.

## On-site crew

- **EIC (engineer in charge):** Primary technical lead for the overall production
- **Tech manager/backup technical director:** technical set up
- **Audio assistant (A2):** Responsible for mixing audio on all feeds prior to transmission back to the studio
- **Camera operators:** Only required for cameras that are manually controlled on-site.
- **Announcers:** In this case, announcers are onsite in the press box. However, it's now more possible to centrally integrate announcers into the game, or enable them to work from other remote locations.
- **2 Utilities:** Assist camera operators with setup and cable management.

## Central production studio crew:

- **Engineer (EIC):** Primary technical lead at the studio
- **Producer:** Responsible for producing the event
- **Director/technical director:** Responsible for directing and switching the event
- **Graphics operator:** Responsible for all on-air graphics insertion
- **Tape operator:** Responsible for all pre-recorded and replay elements of the show
- **Audio mixer:** Creates the final audio mix of the production prior to distribution
- **Robotic camera operator:** Controls any robotic or remotely controlled cameras at the venue

On average, moving to a centralized remote production model can save 20-25% in personnel charges.

For a typical football game like the one described above, the remote model saved travel and expenses associated with seven of the crew members. In addition, reliability and predictability increased, as the crew members were not only known, but available to work across multiple games. In fact, an entire studio crew can be scheduled for every game during a season, including multiple games per day.

## IP transport is a gamechanger

In order to take advantage of shared centralized personnel and studio resources, reliable connectivity between the venue and the central studio is critical.

Leveraging IP transport, with its ability to provide faster backhaul options, has made it possible to deliver high-quality video and audio from almost any location.

Internet connectivity with sufficient and reliable bandwidth is now available practically everywhere with reliable business-class or fiber-based ISP service generally being best practice. You'll need to make sure that there is sufficient bandwidth for the required number of feeds to be reliably delivered from the venue to the studio. This may sound complex, but it's actually quite straightforward, and requires little advanced planning. Your production service provider can also help you with the requirements.

There are several options for types of connectivity between venue and studio. Managed transmission networks provide confidence, with high reliability and proactive monitoring and support. In other cases, box-to-box solutions with protocols such as SRT or RIST can also enable connectivity. However, the ultimate decision for backhaul transmission will depend on factors such as what's currently available at the venue, lead time, and latency requirements.

When investigating centralized production opportunities, it should be noted that service providers that include transmission for backhaul and acquisition from the venue, along with distribution to end destinations, can offer more transparency, reliability, and peace of mind..

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## New normal, new possibilities

Attempting to persuade decision makers to change the way they create live productions is not easy. Live events are typically high pressure productions, where quality directly affects ad- or subscription-based revenue.

As previously mentioned, the shift in convincing engineers, production heads, athletic directors, and senior executives to move to a centralized remote production model started several years ago. The social distancing protocols and travel limitations due to Covid-19, however, has accelerated the process. The ability to have a fraction of the on-site personnel, at a safe social distance, with announcers working from their homes — combined with streamlined workflows, are centralized remote production practices that have aligned with the current pandemic protocols.

Even post-pandemic, we do not predict a return to traditional, on-site remote production models for many — if not most — events.

Productions have been streamlined, shows continue to be created, and budgets are manageable. At the end of the day, viewers and advertisers can't discern if the content is created using centralized production, or with a full crew working on-site, from a mobile unit.

Remote productions are estimated to cost approximately 20% less than traditional on-site remote productions, with no required capex from the content creator. When done correctly, that cost savings has no negative impact on quality — and can, in fact, improve the final production, as a result of increased reliability and workflow automation. The following case studies highlight recent mission-critical event productions that LTN has enabled, as well as the complementary, end-to-end LTN services offered.

## Sports remote production, Flexed

Sporting events have historically been the earliest adopters of centralized production. Requiring minimal on-site staff and gear, LTN Flex enables audio and video sources to be reliably backhauled to a centralized production facility. Sources are switched, wipes, graphics, replays, nat sound, announcers and music are integrated, and the feed is distributed live to any desired destination — broadcast, digital or OTT.

## LTN Flex scores with Soccer

In the world of Professional Soccer, sending the production team to 17 away games across the country and Canada is cost-prohibitive. However, to keep fans engaged, it's critical to provide quality broadcasts for every game. As illustrated below, LTN was able to save one team 50% on average per away game — while meeting high-quality standards — by using a centralized workflow.

## More capabilities, less crew:

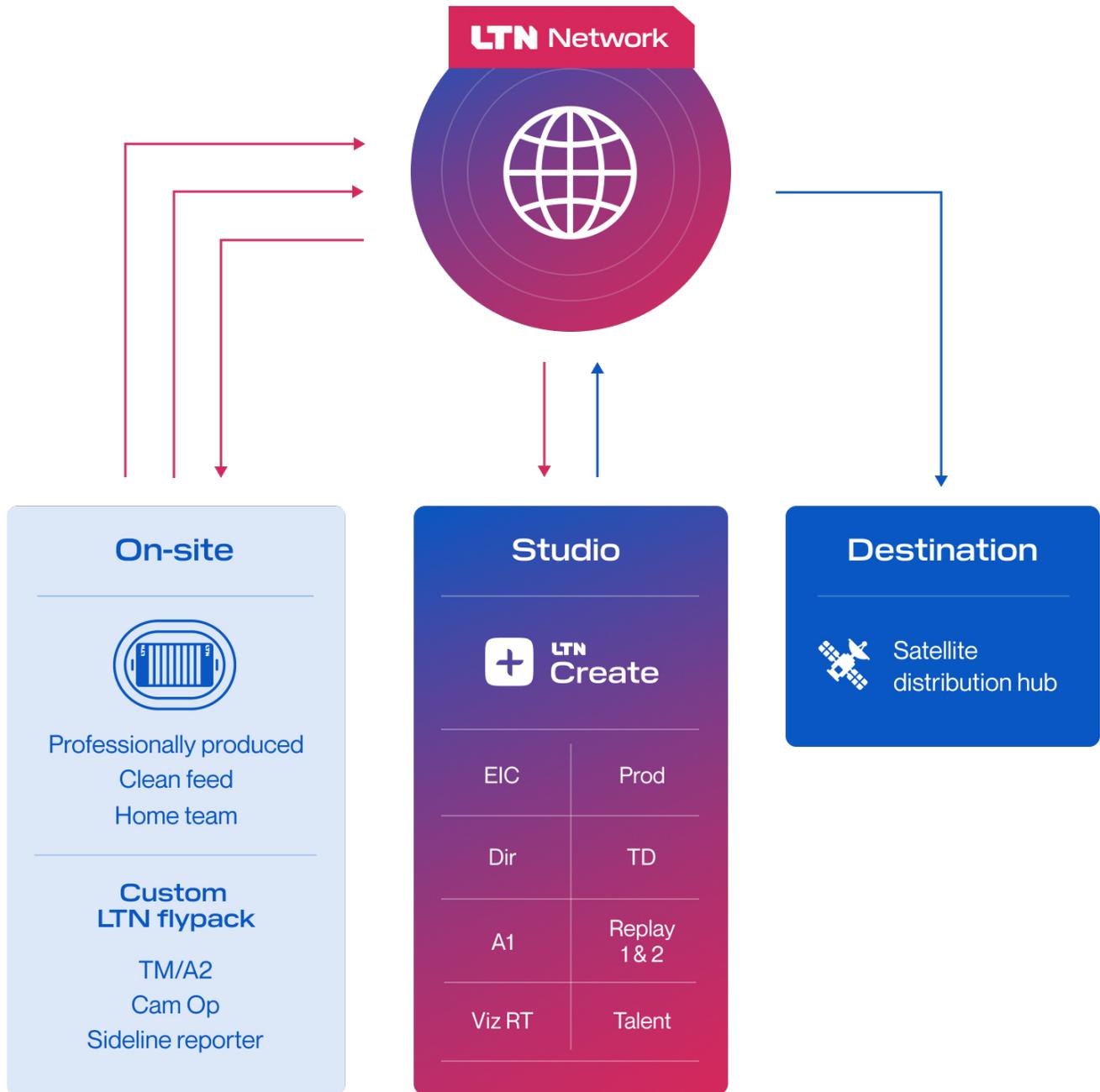
On-site personnel for the away games is limited to a tech manager/audio assistant, one camera operator, and one sideline reporter.

The same in-studio personnel are used for all of the games — the producer, director, talent, TD, graphics operator, font coordinator, replay operator and audio engineer. Keeping the positions local eliminates a majority of the crew's travel expenses, while maintaining the high-quality game production expected by the league and its fans. Additionally, the play-by-play and analyst call the game from the studio, instead of traveling to away stadiums, for more savings.

## Production champs

A clean feed of the cameras with generic league branded wipes are sent through the LTN Network back to the Kansas City production studio. There, the game is produced with team specific graphics, music, replays, etc. then the finished game is distributed via the LTN Network to a regional sports network.

## Match production workflow



## LTN Flex and esports, for the win

In early 2020 EA Sports engaged with LTN to develop a centralized workflow to bring together 20+ individual contestants, eight announcers, and live gaming. Additional client requirements included using a standard production crew that was familiar with the esports tournament, but lived in various cities across the country.

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## Game on

The popular annual esports tournament Madden 20 Championship was produced during the early days of the Covid-19 lockdown. Despite pandemic-related, logistical complications, LTN enabled EA to flawlessly deliver the 12-day event — with massive broadcast and online viewership and engagement

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## Championship team

Throughout the Madden 20 Championship, LTN production technicians switched, added replays, and mixed all audio through the LTN production studios. Additionally, by connecting multiple LTN studios and expanding the number of source inputs, LTN was able to handle the enormous number of sources being fed.

By leveraging the LTN Network and the LTN Live Video Cloud service, graphics operators, producers and directors located across the country, were able to work as a single, cohesive team

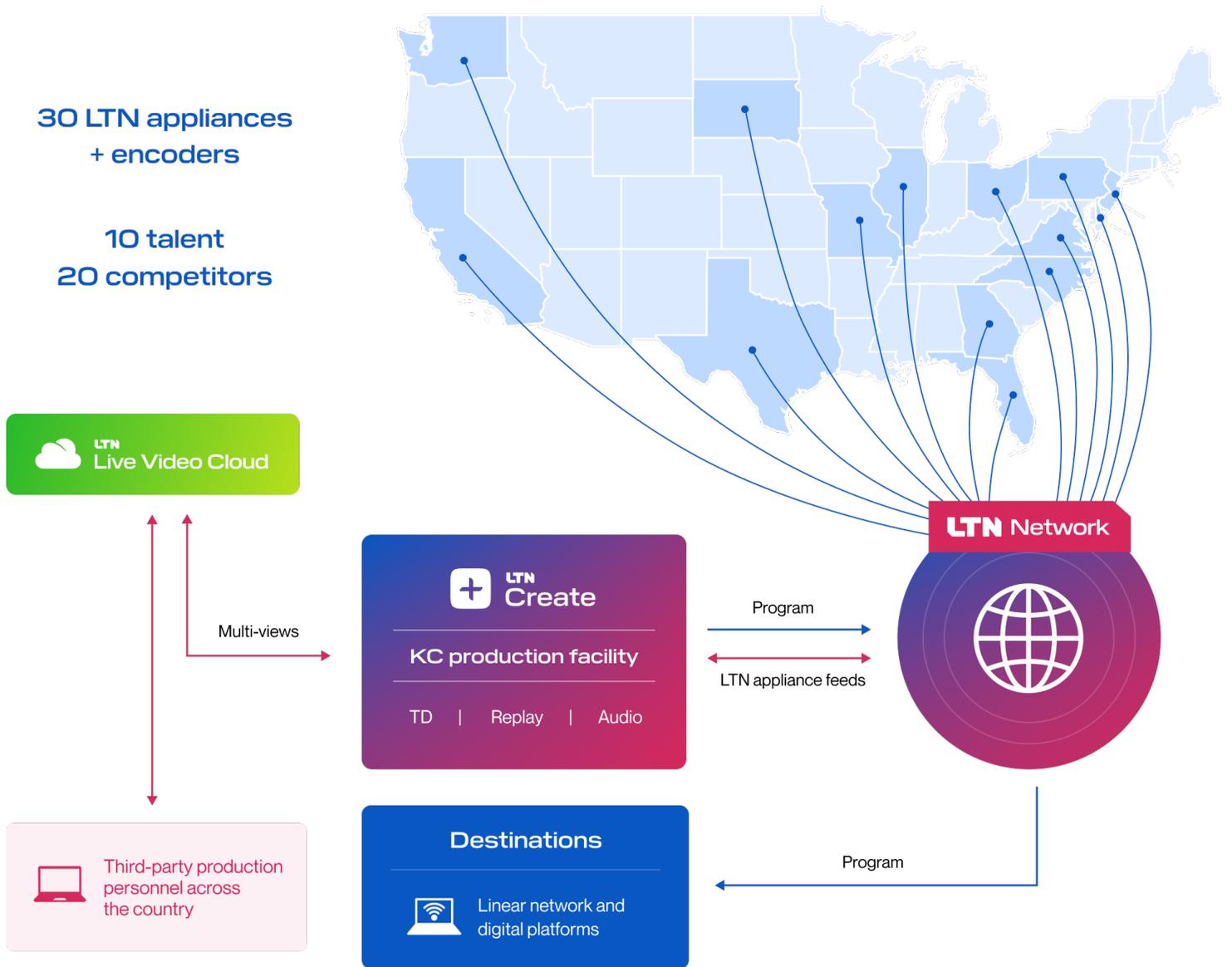
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## Big time production

The show featured eight announcers and 22 competitors. The LTN production facility controlled and linked all communications, sources and production elements, and distributed the multi-day event live to ESPN, YouTube and Twitch.

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## Esports gameday workflow



# LTN Flex for entertainment

## Staying live during a pandemic

Although originally created for the live sports market, LTN Flex has also proven to be an efficient, scalable solution for the entertainment industry.

After the country was hit by COVID-19, a broadcast network singing competition show and their production company approached LTN to develop a safe, customized solution that allowed contestants to perform, compete, and communicate in real-time, for multiple judges in various cities across the US and Canada.

## Offsite crew and talent, safe performances

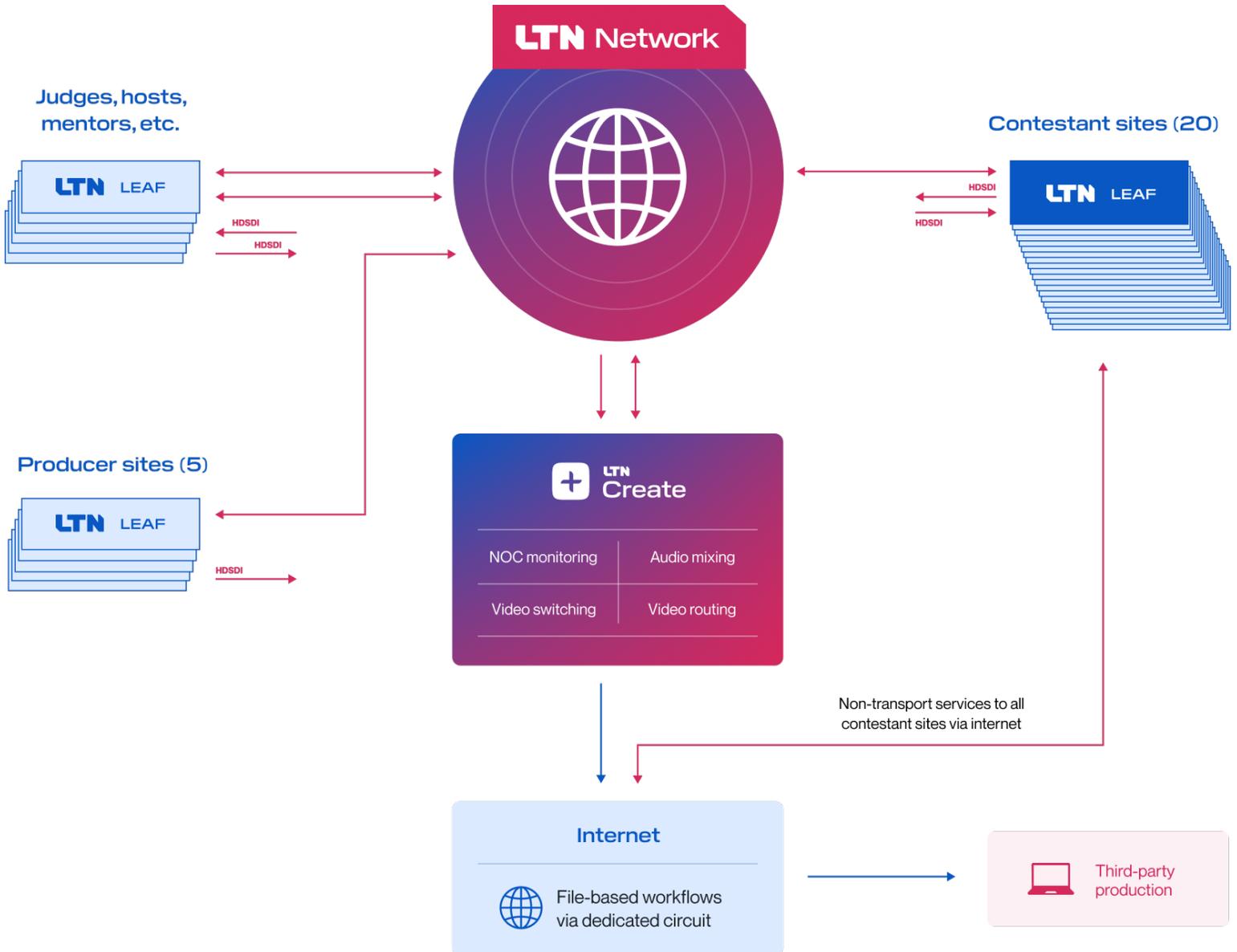
LTN enabled the show to successfully create a 100% offsite production — the host, judges and contestants were all performing live from their homes, and the entire LTN Flex production team was either working remotely from their own homes, or in the LTN studio

## Production star power

25 LTN Flypacks — the size of a small suitcase — were sent to each contestant, judge, and the host. The Flypacks served as easy plug-and-play transmission kits that provided the capabilities to deploy a fully-managed remote production experience. All gear and internet connectivity were tested and monitored by the experienced team at the LTN network operations center.

The contestants and judges simply plugged the LTN Flypack into their home network, and iPhones — Apple was a show sponsor — were used as cameras. LTN routed a total of 25 feeds into their centralized production studio, and created custom multi-views for the contestants and judges to communicate with each other in realtime via an innovative implementation of over forty intercom channels.

## Remote production workflow



## State-of-the-art capabilities

LTN has been delivering remote production services for over 5-years. With its state-of-the-art, 30,000 square foot production facility with eight production studios, there is no additional capital expense required by content creators.

LTN's investment in cloud-based production tools, combined with LTN OU Transport and Live Video Cloud solutions, enable productions to scale beyond more traditional physical, centralized production studios

All events are fully-supported and monitored from our network operations center by a team of media production and content experts.

Flex can fit into any production scenario — from producing an event from concept to distribution, to taking a more modular approach with individual services that enable seamless collaboration with third-party production companies, partners, and technology.

As production teams have moved from on-site to a centralized model, travel and the cost of labor is significantly reduced. Perhaps even more importantly, the skill set of those production experts can be consistent from show to show.

## Winning workflows

LTN Flex can tailor a customized workflow for any content creator, including logistics, crewing and staffing, production coordination, shipping, transmission, closed captioning, graphics creation, content archiving, and 24-hour monitoring.

More people than ever are watching live content which means more content creators are searching for streamlined workflows that don't require large crews, expensive trucks, and excessive on-site equipment. The speed and ultra-low latency of the LTN Network, integrated with a comprehensive, white-glove production experience, make the Flex workflow adaptable and attractive for all market segments.

LTN Flex is a fully-customizable solution that meets the needs of any content creator, from the smallest production houses to the largest networks. Operating on the 99.999% reliable LTN Network, Flex allows for powerful customization of your content, for greater flexibility, scalability, and monetization.