Whitepaper

VOTIX
Drone Orchestration and Automation



10 KEY POINTS
when choosing a drone live streaming software

Not a long time ago, watching a live drone footage was pretty much impossible, unless the viewer was standing beside the pilot and got a chance to glance at the screen.

Now, drone live streaming is a growing demand across a number of industries, from entertainment to law enforcement.

With VOTIX being the best software on the market, let us help you recognize what makes a good and reliable drone live stream.

In this article we'll talk about 10 key points to consider when choosing a drone live stream software.

1 Drone live stream latency

Latency is the first and also one of the most important points when it comes to drone live streaming. The term refers to the time gap between the moment a frame is captured by the camera and the instant it's displayed to the viewers. In general, the lower the latency rate, the better.

A low latency rate means that the streaming is closer to a real-time viewing. That's crucial in many circumstances, such as during law enforcement operations that require instant coordination and response.

Low latency streaming rates also allow pilots to have a high level of precision and reaction, avoiding crashes and underperformance.

But how low is enough for drone live stream latency? Based on thousands of hours of testing and our best knowledge in the field of remote drone operations and connectivity, the latency of a drone live stream must be less than 250ms to be considered “real-time”.

VOTIX STREAM, for instance, has an ultra-low latency rate of less than a quarter of a second! That's “real-time” streaming we're talking about here.

2 Streaming quality and image resolution

Overall streaming quality and image resolution are key to a number of drone live stream applications. They are directly related to latency, as high image quality may impact latency rates. That's why it's important to be able to control these configurations according to the specific streaming needs.

When it comes to concerts and sports games, for instance, video broadcasting quality is essential to provide a good user experience. The same goes to any drone live stream related to commercial ads and tourism campaigns.

Drone live stream quality is also an important feature to missions that aim to gather recorded, documented evidence. It's also essential whenever there's a need for immediate, detailed identification of people, objects and structures. E.g. for insurance inspections and law enforcement operations.

To give a reference number, for certain applications the minimum streaming quality should be 1080p and the minimum image resolution should be 3.5M.

That includes missions such as:

- DFR (Drone as First Responder)
- Situational awareness (for police, military, and surveillance operations in real-time)
- Broadcasting
- Cinematography
- Sensitive or enclosed inspections
- Events etc.

It's important to highlight, though, that under certain conditions a 720p video resolution and a 2.5M average image size are acceptable.

When choosing a drone live stream software, don't forget to check if both the streaming quality and image resolution suit your needs.

VOTIX enables you to configure your live streaming quality from 480p to 4K - though, for better performance, in most case scenarios we advise a range between 720p (HD) and 1080 (FHD).

Plus, our software also allows you to manage the video image resolution in any size the original sensor provides. With VOTIX you have high video quality in high resolution!



3 Configurable quality and resolution

It's not only about having quality and resolution but also how and when to use it. There's an optimal balance between quality and resolution with bandwidth.

You need to have a dynamic solution that monitors bandwidth in real-time and is constantly balancing the video transfer load for an efficient and optimal video delivery at ultra-low latencies.

Considering that, VOTIX's software allows for customizable configurations, such as image resolution and bit rate, to tweak latency numbers according to the mission's needs.

That means customers can fine tune the signal to get an even more fluent streaming or a higher quality image. Furthermore, VOTIX advanced technology monitors bandwidth in real-time to rebalance data transmission and maintain optimal latency.

4 Metadata and information accuracy

Besides image quality, a good drone live stream software should also provide reliable, accurate data and information. In some operations, any margin of error may impact the results, so high accuracy levels are key.

By accuracy we mean that all metadata, sensor information and telemetry data, such as measurements and statistics, are precise.

That gives stakeholders the ability to make various associations with the information provided. Plus, it reassures them that they are making informed decisions based on reliable data.

High accuracy in drone live stream is paramount to a number of missions, from industrial inspections to search and rescue ops, among many more.

VOTIX combines the metadata from the original sensors used during the mission with drone logs and telemetry. That way, it provides users with enhanced information for a more accurate and insightful dataset both during and after operations.





5 Customized signal distribution

Another key point in a drone live stream software is the ability of customizing and controlling signal distribution to various viewers.

That means users should be able to distribute stream signals to different stakeholders in different locations and in different manners, if needed.

For instance, a signal for one stakeholder could require authentication, while for others that wouldn't be necessary. One signal could provide telemetry data, while another would only show the streaming itself.

Controlling signal distribution improves security and helps to optimize time and resources. At the same time, it allows each stakeholder to get a stream signal customized to their needs and clearance level.

VOTIX owns a powerful VMS (Video Management System) optimized for drone video signals at optimal delivery and management capabilities. VOTIX's VMS allows customers to control, repurpose and distribute video signals in different formats and for different objectives.

6 Live stream security

It goes without saying that security is one of the most important topics in drone live streaming.

After all, any video transmission should be accessed and viewed only by those with permission to do so.

VOTIX STREAM, for example, takes this matter seriously, implementing a number of different features:

- Signal encryption, so the video stream is secured while being transmitted
- Role-based access to the streaming, with granular control of signal capabilities per viewer
- Options of authenticated, open or PIN based streaming
- Full control of the number of viewers allowed per streaming, ranging from one to many viewers

7 Integration and interoperation

An important aspect for any drone live stream software is the capability of supporting different devices and secondary systems, both for receiving and broadcasting signals.

Let's take a security operation as an example. The most likely scenario is that the mission will include not only drone images, but also video feeds from different sources, such as surveillance cameras.

Therefore, an efficient live stream software should support, receive and stream video from any source, allowing stakeholders to have real-time info from as many points of view as they need.

VOTIX STREAM does that and more. It supports any video signal, which can then be integrated with the software's security and efficiency levels before being distributed to secondary systems, such as those used by law enforcement.

Plus, it also allows video broadcasting through YouTube, Facebook, Twitter, Vimeo, etc.

8 Ease of use and deployment

Drone live stream is here to facilitate a wide number of different operations. So, setting it up should also be quick and easy.

When choosing a drone live stream software, check if the platform is intuitive and how long it takes to set up a streaming session.

Ideally, all commands should be user friendly, and beginning a live stream should be quick and require only a few clicks.

That's what our customers get with VOTIX STREAM, which was built to be intuitive. With our software, you'll be able to rapidly set up and distribute broadcasting signals to your chosen audience.



9 Drone agnostic capability

A scalable and flexible drone live stream software should also be hardware agnostic. That means it should work with any drone from any vendor. Without drone agnostic capability, your streaming possibilities will be limited to the same vendor or to the equipment you have right now. That doesn't work if you have a diverse fleet or if you want to keep up with new releases and technologies from different vendors.

VOTIX, of course, is hardware agnostic. With us, there are no limits to your streaming missions.

10 Visual intelligence and constant improvements

Last but not least, drone live streaming is the result of relatively new technology. As with any new technology, it has room for numerous improvements and will likely change a lot in the coming years. Thus, keep in mind that any drone live stream software you choose should be constantly adapting, enhancing established features and implementing new ones.

At VOTIX, recent enhancements for drone live streaming include artificial intelligence (AI) for object recognition, object counting and volume calculation - and there's a lot more on the way.



VOTIX STREAM: the best software for drone live streaming

VOTIX STREAM checks all the boxes when it comes to drone live streaming. If you're looking for a reliable, ultra-low latency drone streaming solution, look no further.

With VOTIX you can stream any video source, from anywhere, to any browser or broadcasting system, to as many viewers as needed.



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