ZAO-S Live Streaming Whitepaper

MOBILE SURVEILLANCE AND PUBLIC SAFETY

LIVE STREAMING FOR LAW ENFORCEMENT

Law enforcement agencies across the globe are utilizing the Soliton Zao-S for a variety of mobile and remote live streaming video applications.

By allowing a mobile camera to go to where the action is, as oppose to waiting for the action to go past a fixed surveillance camera, operational commanders can view events in real-time and make immediate operational decisions as events unfold.

From special ops where a judicial committee need to review a live body-worn cam in real-time, to public safety where an event needs to be monitored, to a pursuit that can live stream from a car complete with GPS, to live streaming from a drone - in all these situations video can give an instant real-time perspective of any operational or critical situation. This can help saves lives, gather evidence, enables commanders to make informed decisions or make officers accountable or prove their innocence.

The Zao-S is a mobile video encoder that can encrypt video (AES256) and live stream reliably over multiple 4G connections using the latest compression technique of H.265. It connects to a mobile external camera and can send live video to a control and command center with very low latency. Typically, the delay is less than a second, and is normally fixed to 700ms. By using multiple 4G networks, including the prioritized emergency services network or the public cellular network or a mixture of them, it has proved to work extremely reliably, even when there is a low signal or a congested area with a lot of people using their phones.

ZAO-S

Mobile Video Streaming

User Case Scenarios

Remote Mobile Surveillance

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Special Ops

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Drones

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Vehicles

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Body Worn

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Helicopters

ZAO-S FEATURES

Encrypted Live Streaming
Low Delay from 240ms
Streaming over multiple 4G
ONVIF Compliant
Highly Reliable
Full Broadcast Quality
Lightweight & Mobile

The video stream is ONVIF compliant, a standard that is used by many global Video Management Systems (VMS) to review, display and record video streams and are located at the majority of law enforcement or emergency responder control rooms around the globe.

The video quality is high and can transmit in full HD, and so can lend itself to many other applications such as facial recognition or covert operations where fine detail needs to be analyzed either manually, or by another layer of Artificial Intelligence.

The Zao-S is a lightweight 400gram unit that can be used with a variety of external cameras that support either HDMI or HD-SDI to provide a highly reliable, encrypted and broadcast quality live stream from a remote location in the field. It enables more effective policing and is in use today by many emergency responders and law enforcement agencies across the world.

HOW THE ZAO-S WORKS FOR LIVE STREAMING

The Zao-S is a small H.265 HEVC encoder that can be connected to an external camera via HDMI or an HD-SDI cable. It can be carried in a bag pack (included) and can be powered via its internal battery (45-60 minutes), external battery (included giving 3 – 4 hours) or an external power supply unit (PSU – provided).

If utilizing 4G, up to 3 dongles can be attached that supports 3G or 4G (and 5G when it becomes available) with SIM cards from different carriers. Dongles and SIM's can be provided on request.

A USB to ethernet adapter is also provided for encoding over a LAN or satellite if required.

It can be controlled via the front panel, a smartphone app or via the web management to live stream a fully encrypted video feed to a remote destination, normally a command centre.
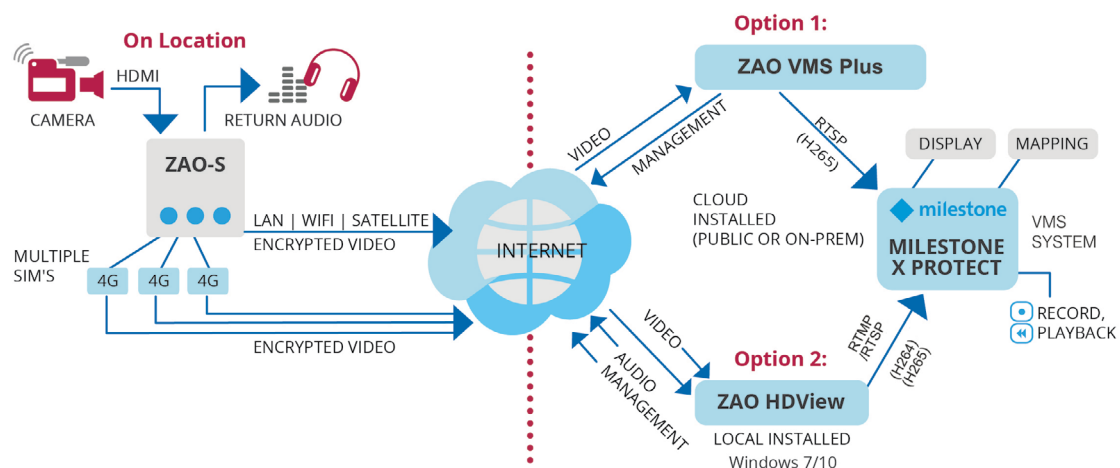
WHAT ABOUT THE RECEIVING END?

There are two solutions for the receiving end, normally installed within the Command and Control Centre.

1) HD View – This is a software decoder that is installed on a Win 7 or Win 10 platform at the receiving end. Two versions are available: 1 channel and 4 channel. The receiving end can provide an HD-SDI video output, or it can be configured to provide an RTMP (IP) stream (H.264) that can be pushed to social media or other platform supporting standard H.264 RTMP protocols.

2) Zao VMS Plus – This is a cloud-based software decoder that can be installed in the cloud (for example Azure) or it can be installed on a virtual computer environment within the end users own data centre. The Zao Media Gateway is the preferred choice for law enforcement as it can provide an ONVIF compliant RTMP/H.265 stream with very low latency

3) **Zao Cloud View** – A hosted or "On-Prem" solution that allows up to 4x Zao-S or 12x Zao Android App encrypted video streams, and up to 6 receiving clients to view and record the incoming live streams either in the Command Centre or remotely in the field.

HOW DO I MANAGE THE UNITS IN THE FIELD?

The Zao Web Management platform is a browser-based cloud solution that can manage remotely all the Zao-S units in the field. It allows the admin person to go-live without any input from the cameraman. It also allows the admin person to change settings on the unit remotely. It can be used to monitor settings including battery life, provide a video preview and check on network configurations.

It can also be used to set up multiple destinations if multiple decoders are being utilized.

CAN I USE A SMARTPHONE FOR LIVE STREAMING?

In addition to the Zao-S, Soliton also has the Zao Android App that allows a first responder to live stream from the camera on their phone.

This allows a video stream from the phone to become ONVIF compliant allowing live video to be display on the existing VMS system with the command and control center. Soliton recently won an award for the Airbus Critical App challenge for the Zao Android App on the Airbus Tactilon Dabat device. Tactilon Dabat is the world's first smartphone and full TETRA radio in one device.