VIASAT DYNAMIC VIDEO ENCODING

Airborne ISR data flow optimization

In today's ISR missions, aircraft are forced to travel long legs from base to objective, where satellite return link data rates can change depending upon the position of the aircraft within the satellite footprint. As the aircraft traverses higher data rate contour rings, they are unable to adjust sensor data rate automatically. Recognizing this limitation, Viasat developed Dynamic Video Encoding (DVE), an application that optimizes ISR data feeds based on satellite capability, and if need be allows for configuration to occur across security boundaries.

What is Dynamic Video Encoding?

Taking advantage of an Adaptive Return Link capability within the satellite modem, Viasat's Dynamic Video Encoding application dynamically changes encoder data rates to fall within the maximum available return link data rate, enabling optimum use of available bandwidth. Viasat DVE is ideal for aircraft that traverse spot beam satellites with aggressive power levels (G/T & EIRP) from beam-edge-to-edge. DVE enables feedback from the modem to the encoder, ensuring the encoder adjusts as the modem data rate changes. If there is a need to bridge the red and black isolation, the application takes advantage of a Cross Domain Solution (CDS) that enables configuration to update across security boundaries. Otherwise, Viasat's DVE functionality can still be used to maximize the data rates, without a crypto requirement.
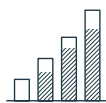
With a router configured for Quality of Service (QoS), Viasat DVE manages congested links for critical services and will enable beam to beam transition, continuous video, C2, and situational awareness to increase mission capability and success to the warfighter.

Dynamic Video Encoding enables:

Video encoding

Increase or decrease the video data as available bandwidth changes to optimize output.
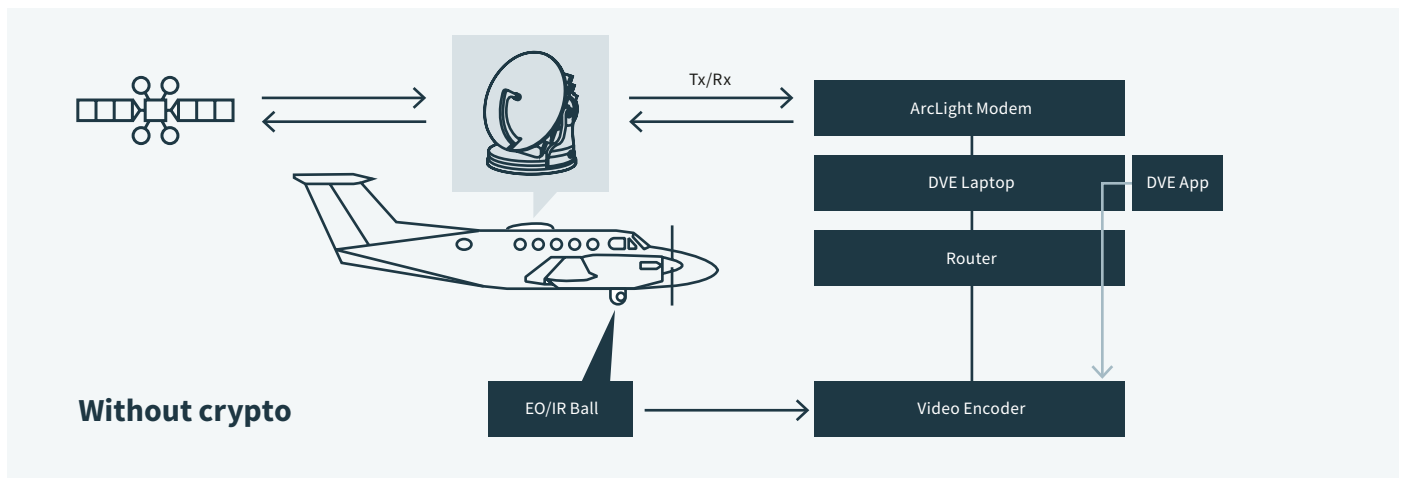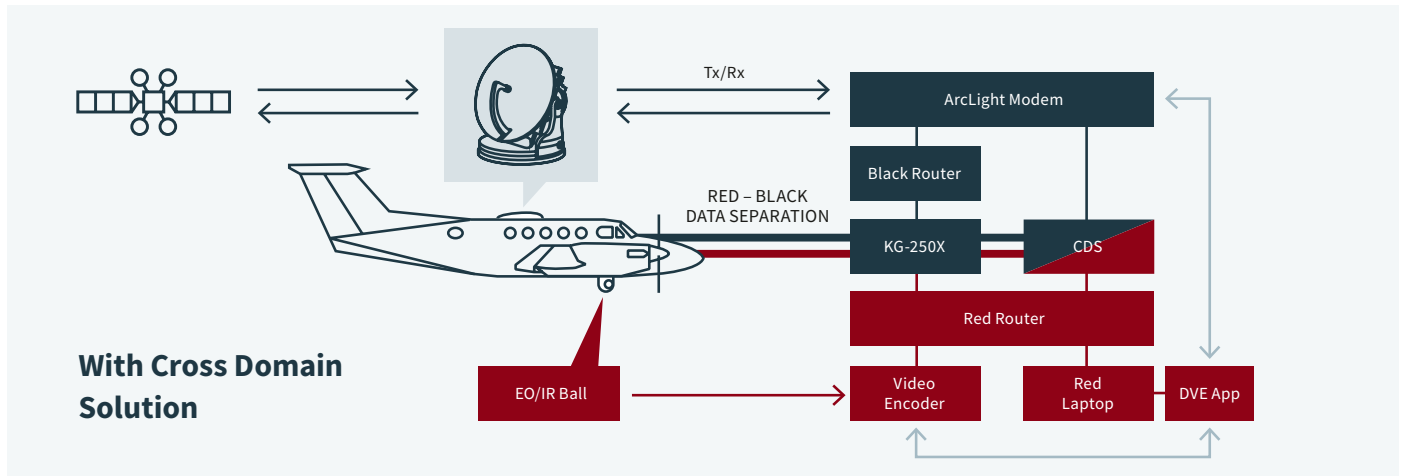
Bandwidth optimization

Optimize baseband applications to get the full effect of the bandwidth you are already paying for.

Enhance Red and Black Separation

Dynamic Video Encoding optimizes video delivery across red and black separation — allowing for configuration to occur across security boundaries.

How it works

With Cross Domain Solution

Tx/Rx

ArcLight Modem

Black Router

RED – BLACK DATA SEPARATION

KG-250X

CDS

Red Router

EO/IR Ball

Video Encoder

Red Laptop

DVE App

Without crypto

Tx/Rx

ArcLight Modem

DVE Laptop

DVE App

Router

EO/IR Ball

Video Encoder

Viasat