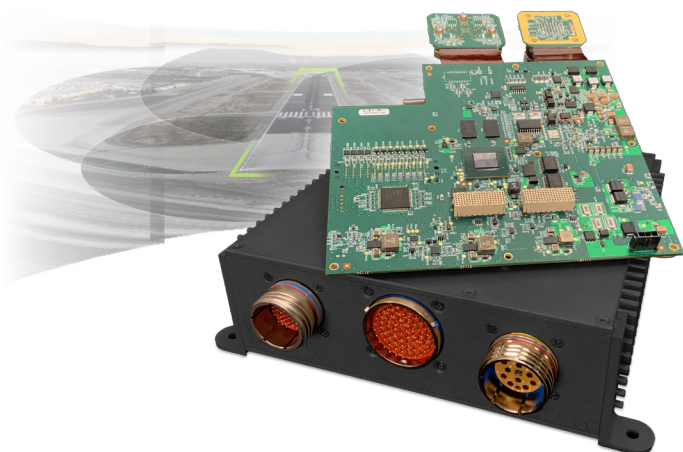
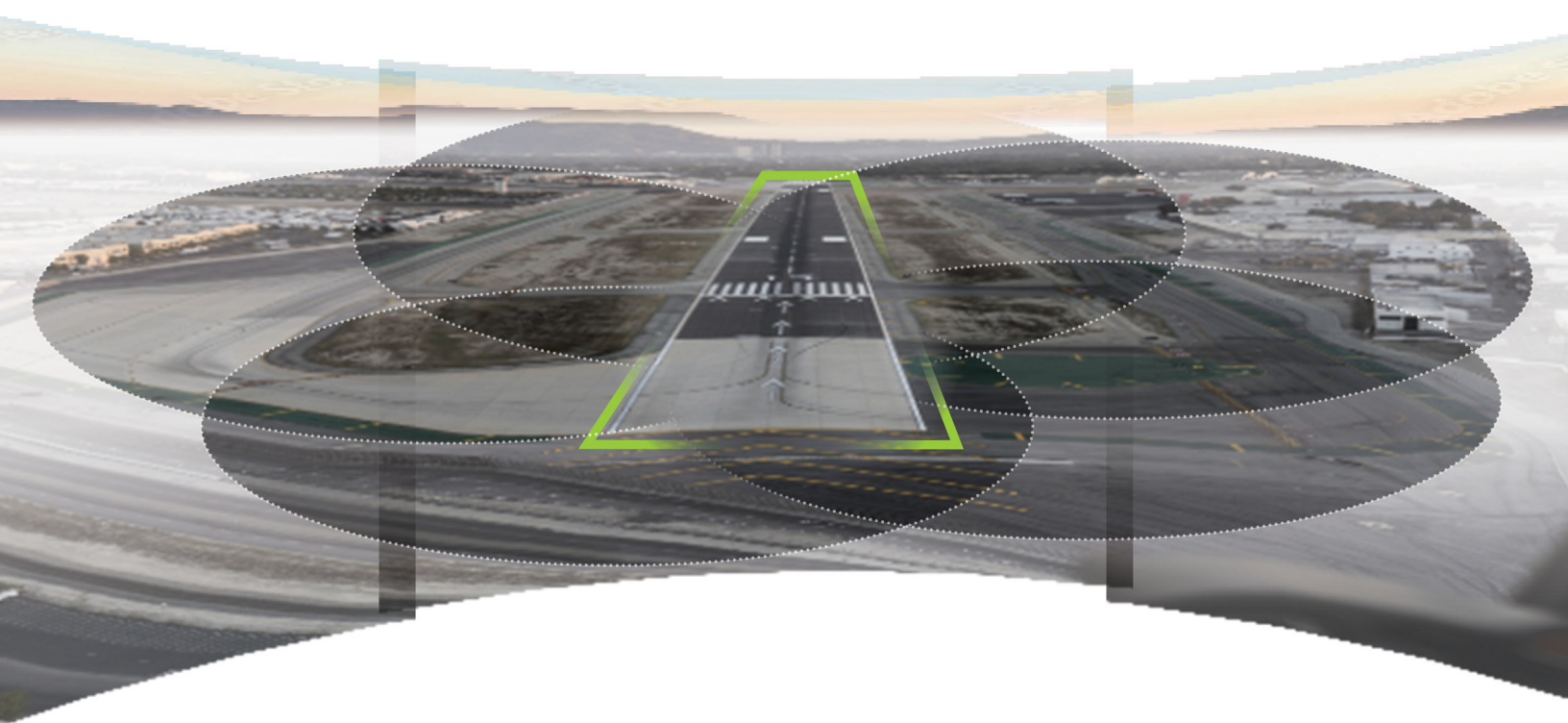


**UNIVERSAL™** AVIONICS

an **Elbit Systems** Company



**APERTURE™**

Situation  
Intelligence.

*Advanced aircraft safety  
through video and sensor fusion  
and augmented reality*

# APERTURE™

## Situation Intelligence

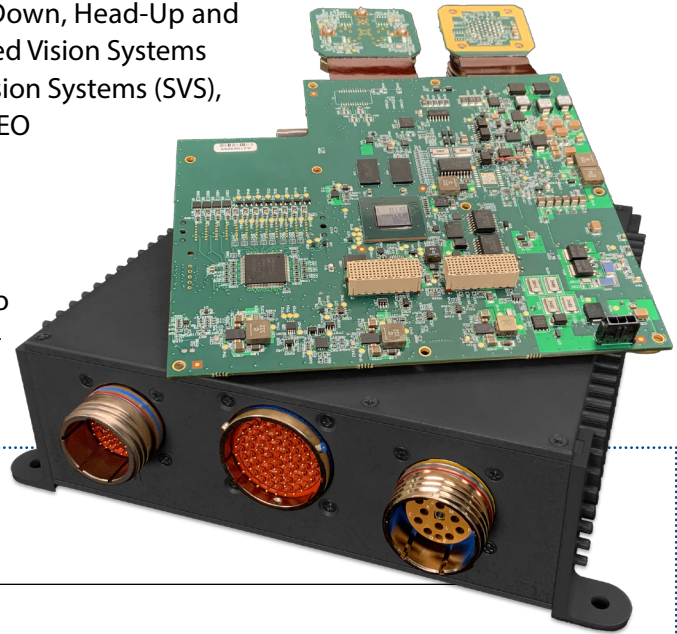
*Turning video into Situation Intelligence. Aperture is a suite of capabilities that will set a new standard in real-time sensor fusion, AI-powered augmented reality, providing unparalleled situational awareness to flight crews and mission specialists, while increasing aircraft safety.*

Initially oriented towards multi-sensor video management, this family of products can process a variety of video and sensor inputs to deliver real time content analysis such as visual positioning, obstacle detection, taxi guidance and traffic awareness.

Universal Avionics, a well-established leader in Head-Down, Head-Up and Head Wearable Displays, with features such as Combined Vision Systems (CVS) – a mix of Enhanced Vision (EVS) and Synthetic Vision Systems (SVS), brings to market Aperture. EXPLOIT THE POWER OF VIDEO

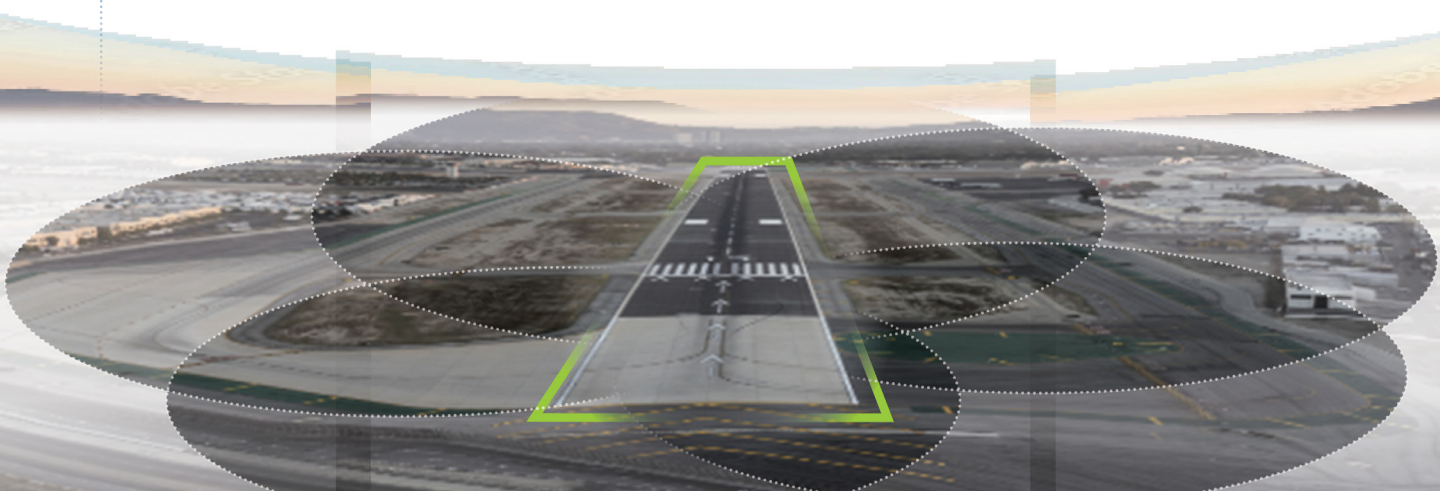
### **The start of the journey**

The initial release of Aperture can process up to 8 video inputs and support up to 4 video outputs with near zero latency, wrapped in the highest design criticality attainable in aviation - Design Assurance Level A.



### **Product Details:**

- 8 x ARINC 818 fiber input channels, with provisions for 2 x SMPTE 292M/424 (Differential)
- 4 x ARINC 818 fiber output channels, with provisions for 2 x SMPTE 292M/424 (Differential)
- Fiber channels with 1.0625 or 4.25 Gbps Frame Rates
- 2 x A429 TX/RX
- RS 422/232
- Weight lower than 3.3 lbs. (1.5kg)
- 15W (Nominal) @ 28VDC
- Design Assurance Level A (DAL A)
- Compliant to stringent DO-160G Environmental Requirements
- Built for growth with large memory and processing capacity, plus built-in interconnections enabling mezzanine board(s)





# APERTURE™

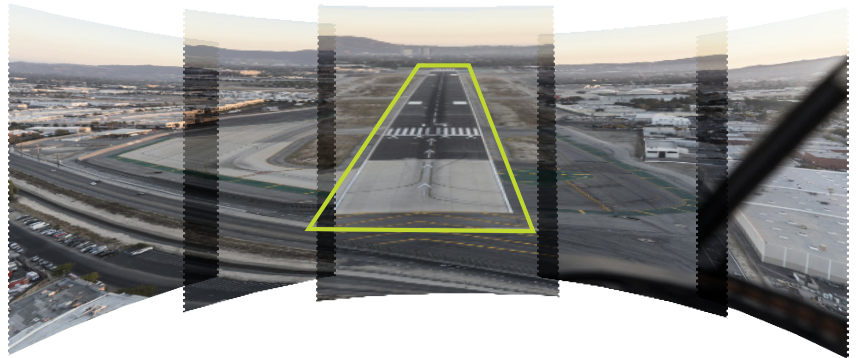
## Situation Intelligence

### Advanced Video Management

Stich, blend, enhance contrast, and more. This is the power of Aperture. Need several inputs presented on the same display? Need color correction and brightness enhancement on an output channel? No problem.

As an example, stitching and blending several sensor inputs located around an aircraft could result in a composite image with a large Field Of Regard

(FOR) – a perfect complement to Universal Avionics' SkyLens™ HWD. By digitally panning across this composite image, a given Field Of View (FOV) can be presented to flight crews wearing the display, vastly improving their situational awareness and enhancing safety. An invaluable capability in high workload situations such as ground operations during limited visibility conditions.

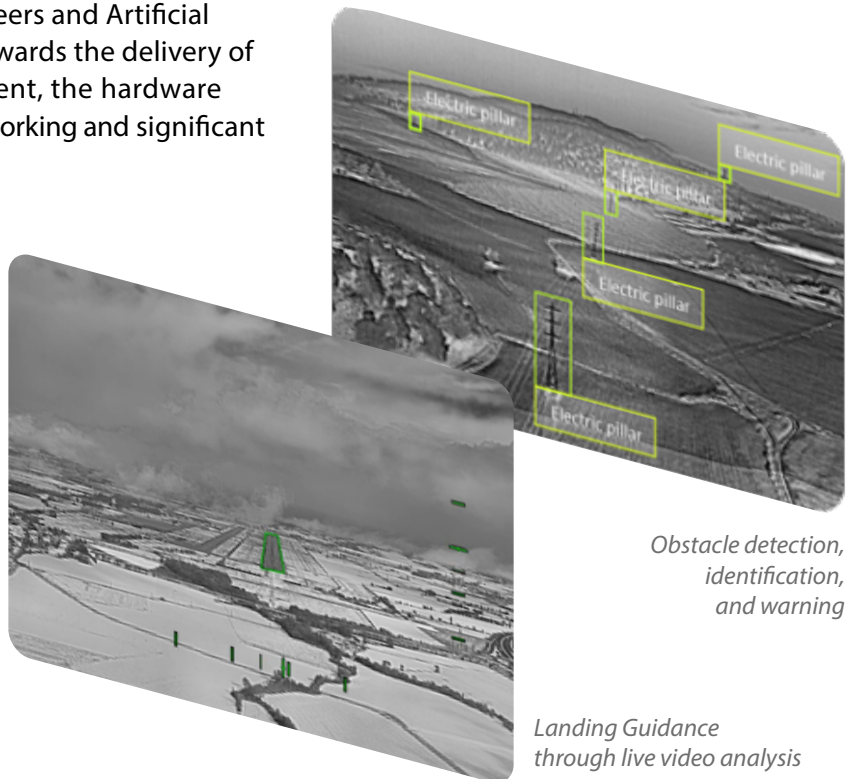


### Augmented Reality through Artificial Intelligence

Universal Avionics' dedicated team of engineers and Artificial Intelligence specialists are forging a path towards the delivery of augmented reality. In advanced development, the hardware platform will deliver cutting-edge neural networking and significant mass storage capabilities.

This platform is the foundation to host Universal's advanced proprietary algorithms and bring to reality, in real time, automatic object detection, classification and notification, semantic segmentation and more. Currently undergoing trials, these algorithms will enable the detection and classification of nearby power lines, traffic on and around an active runway and beyond.

The platform will augment this information with other data from on-board sensors and other avionics systems (mission computers, FMS, etc.), and where appropriate provide to the flight crew augmented awareness and guidance throughout the flight.



Obstacle detection,  
identification,  
and warning

Landing Guidance  
through live video analysis