

Airport Perimeter Awareness

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sightlogix

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What You Will Learn

- ❑ **Perimeter Awareness (Detect, Assess, Respond)**
- ❑ **Perimeter Technologies for Airport Environment**
- ❑ **Airport Video Perimeter Technologies**
- ❑ **Airport & TSA validated Perimeter Security Solution**

Airport Challenges

- ❑ 24/7 security breach detection
- ❑ Knowing breach location
- ❑ Accurate detection without nuisance alerts
- ❑ Ability to withstand environment
- ❑ Adapting to site configurations, and threat levels
- ❑ Security accountability



Perimeter Awareness



Airport Perimeter Detection Technologies

		Line Sensors		Volumetric Sensors	
		Fence Sensors with cameras	Buried Sensor with cameras	Ground Radar with cameras	Thermal GPS Detection Cameras
Accuracy	Impacts probability of detect (POD)	Must contact	Close contact	Target size	Target size (controlable)
	Impacts nuisance alarm rate (NAR)	Fence quality, wind	Animals, ground water, trees, poles	Debris, animals, foliage, weather, ground clutter	Human sized animals
	Alarm verification	Added video	Added video	Added video	Integral
Coverage	Detection area	Contact	Contact	Very Wide (KM)	Medium
	Application environments	Fence only	Open non-traffic terrain	Over water & flat non-trafficked open areas	Adaptive zones - Fence, over water, piers, tanks, pipelines
	Selective area detection	no	no	some	Yes - multiple zones
	Auto position and tracking of PTZ	Position on fence	Position to segment	Position and track	Position and track
	GPS tracking	no	no	yes	yes
	Image capture of alarm event	no	no	no	yes
	Failure mode/Method of redundancy	complete system or segment	complete system or segment	complete system	by segment
	Failure mode	complete system or segment	complete system or segment	complete system	by segment
	Serviceability/MTTR	Local - Cable cut or head end hardware	Local - Cable cut or head end hardware	Specialized - Head end replacement	Local - segment replacement
	Operational detection programmability	no	no	no	yes
Cost	Maintenance	Cable & video system	Coax cable & video system	Mech. drive & video system	video system
	Maintenance costs	\$\$	\$\$	\$\$\$	\$
	Installed Costs	\$\$\$	\$\$\$	\$\$\$\$	\$\$

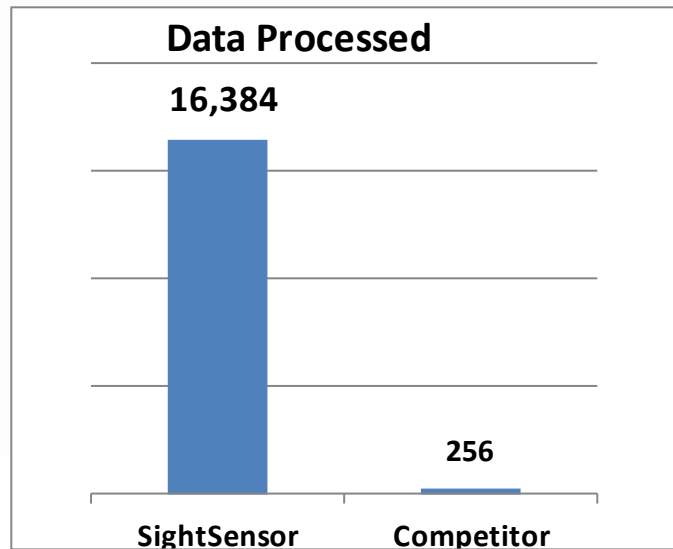
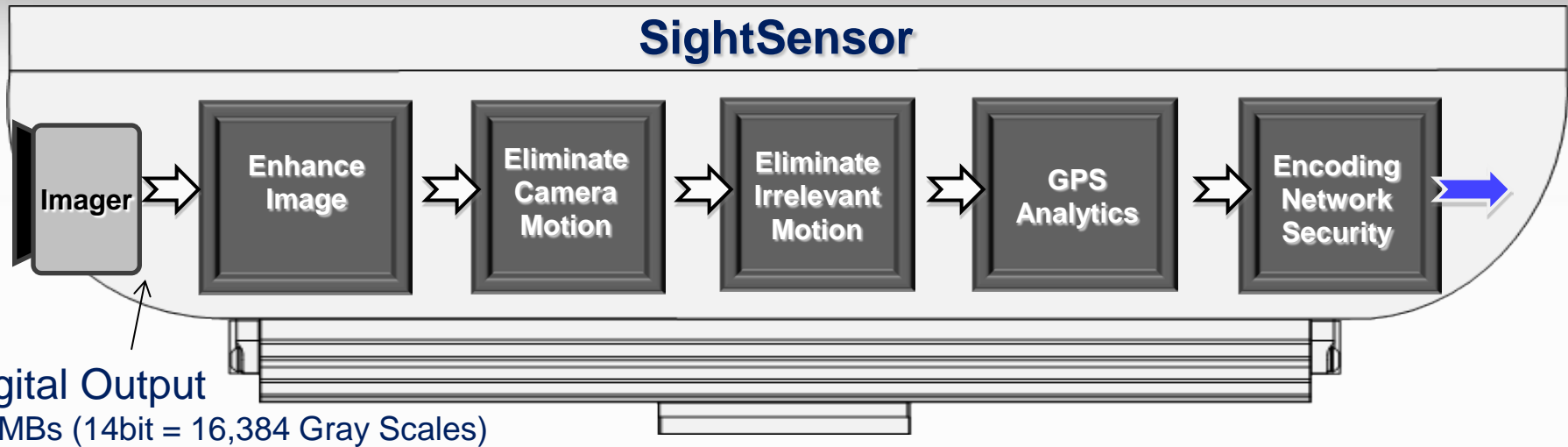
Airport Intrusions Detected Along Fenceline



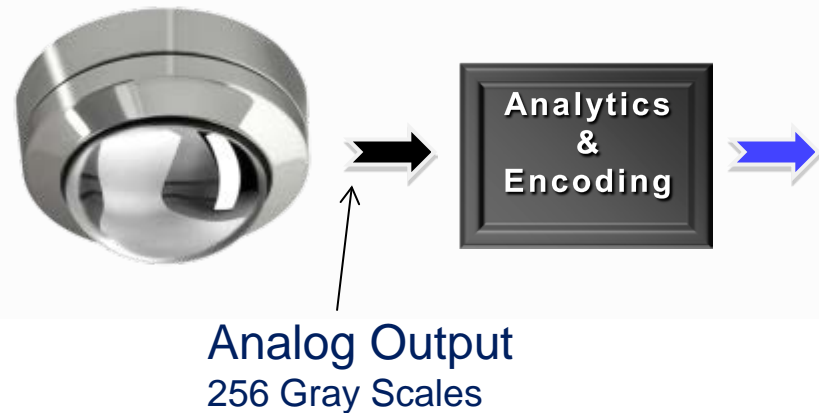


Achieving High Probability of Detect & Low Nuisance Alarms for Airports

Video Processing to See & Detect Intruders



Competitors' Solutions

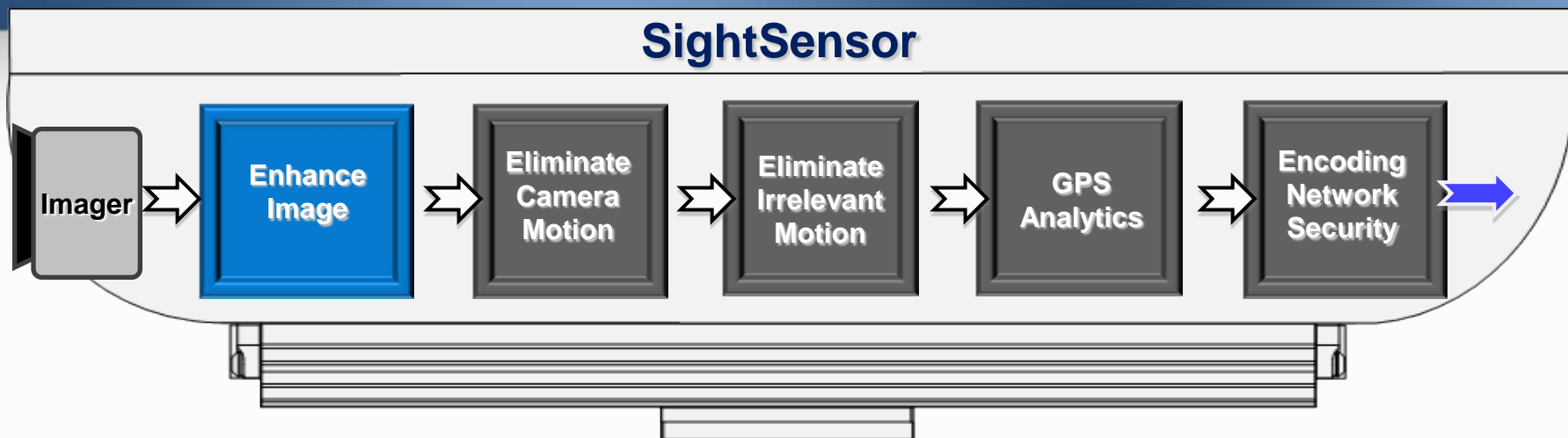


Thermal Camera (During Hurricane)

(Snow, Fog & Hot Weather Detection)



Enhance Image for Clearer Video & High Pd



(Heavy Downpour During Hurricane)



Competitor's Thermal Camera

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Airport Challenge: Camera Motion from Jet Propulsion / Wind

Airplane Jet



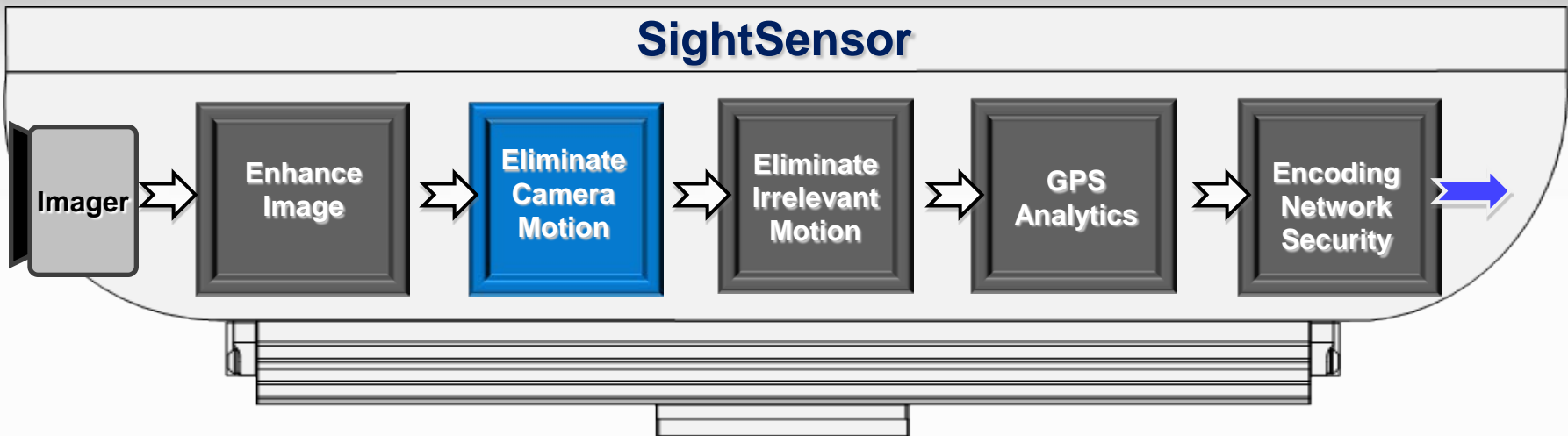
Wind



Raw Video



Eliminating False Alerts from Wind



Eliminate Nuisance Alerts from Irrelevant Motion

Water Motion



High Grass Motion



Shadow Motion



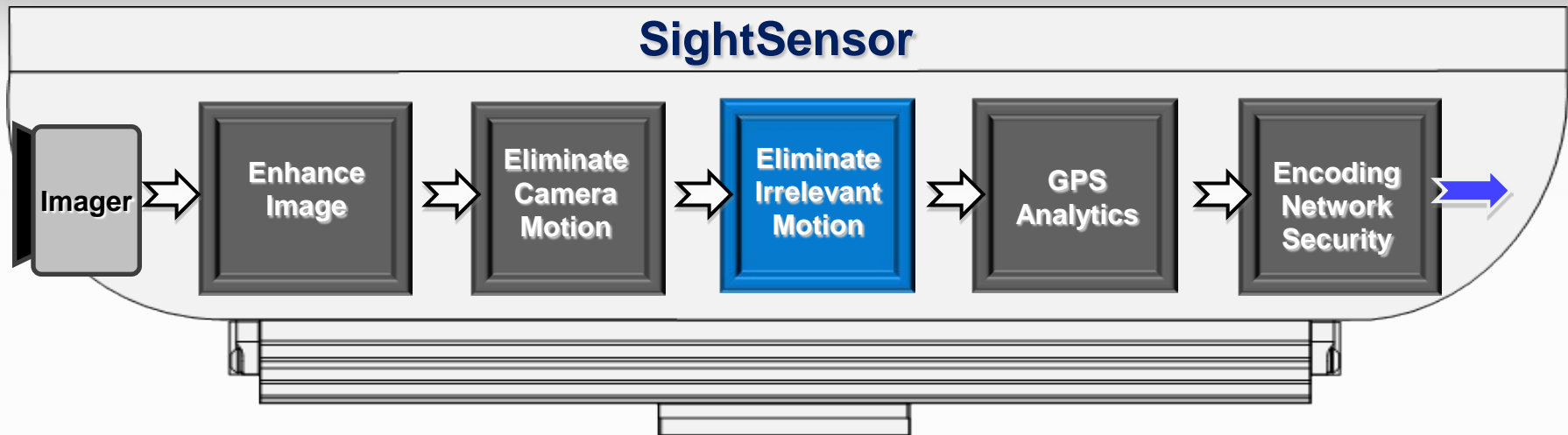
Tree Movement



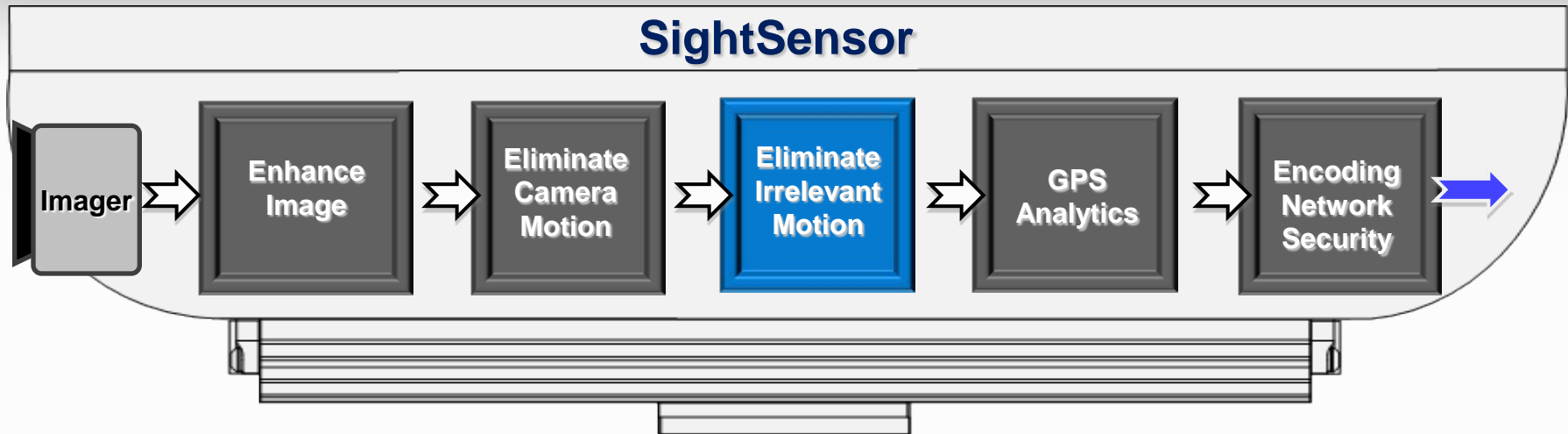
Rain, Sleet, Snow Motion



Eliminate False Alerts from Background Motion



Eliminate Nuisance Alerts from Irrelevant Motion

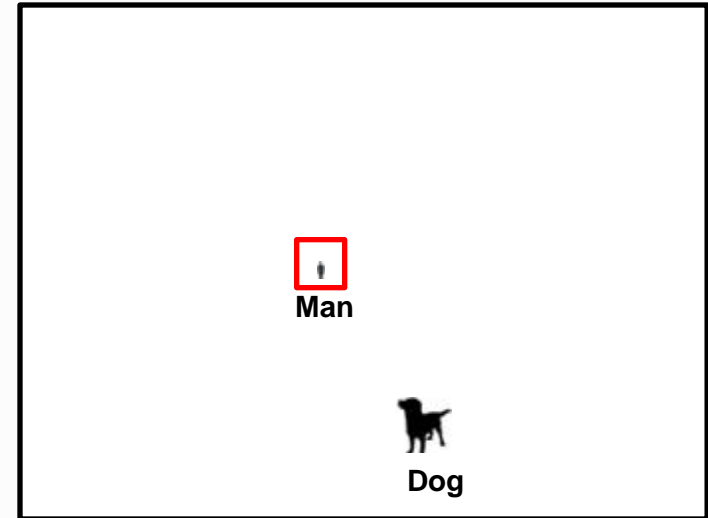
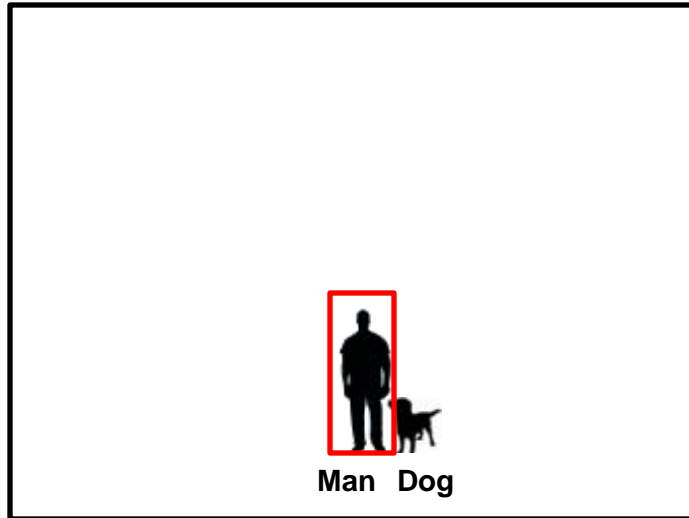


Waves



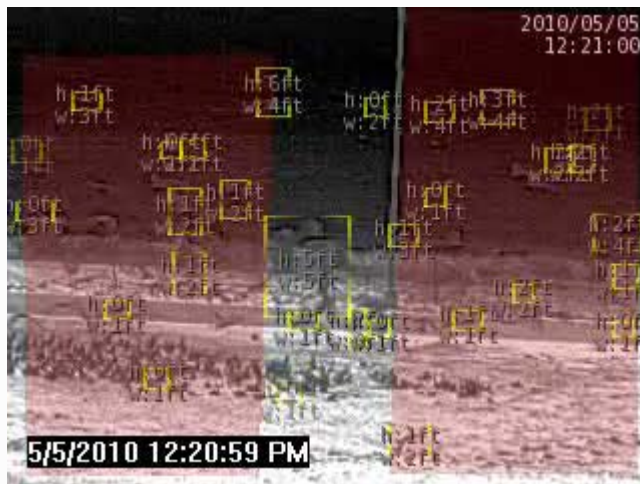
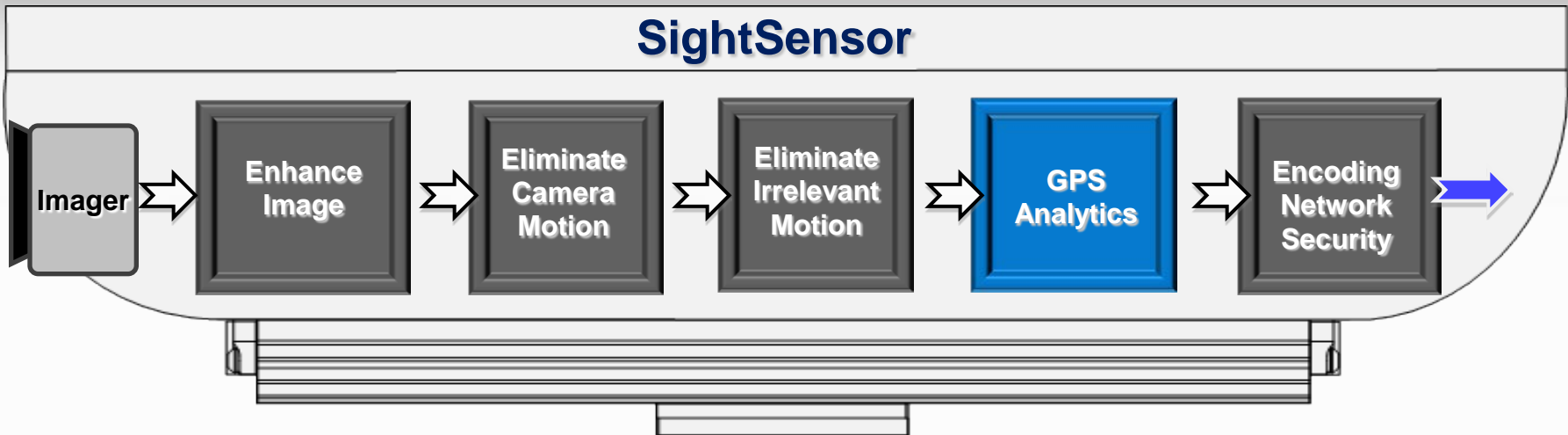
Snow

Accurate Size Filters – GPS Analytics

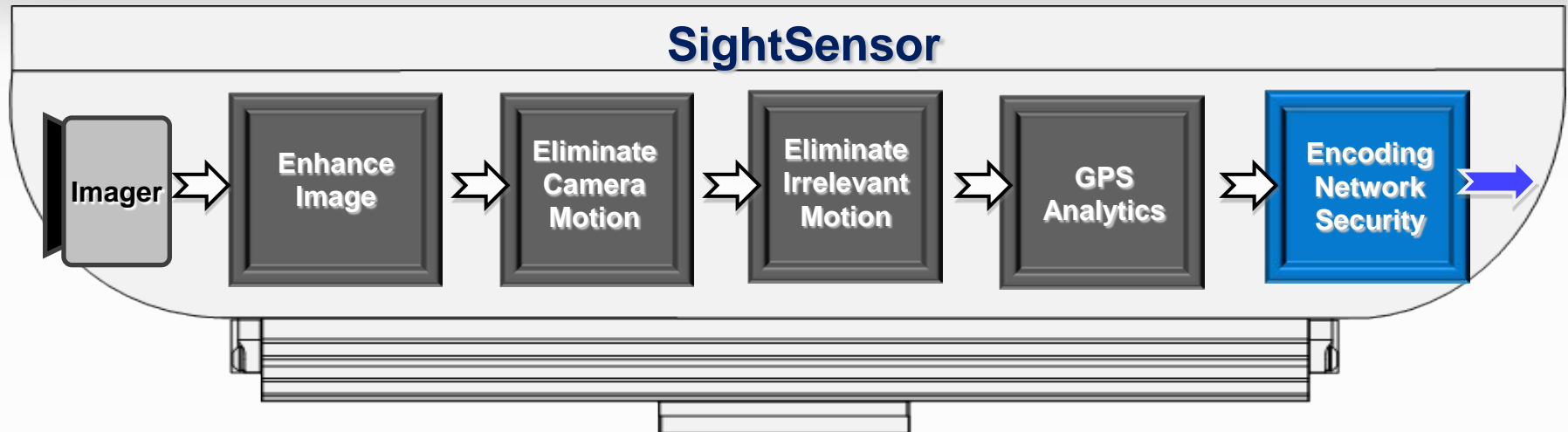


Detect people while ignoring animals/small objects anywhere in view

Accurate Size Filters – GPS Analytics



Designed To Maintain Network Security



- ❖ MPEG4/H.264/MJPEG
- ❖ AES encryption
- ❖ Authentication
- ❖ Hardware tampering reported as alarm

Designed to Withstand the Harsh Outdoors

SightSensor

- *NEMA 4X Enclosure*
- *Nitrogen Sealed*
- *Wide Temperature Range*

Canadian Oil Sands
as low as -50° C

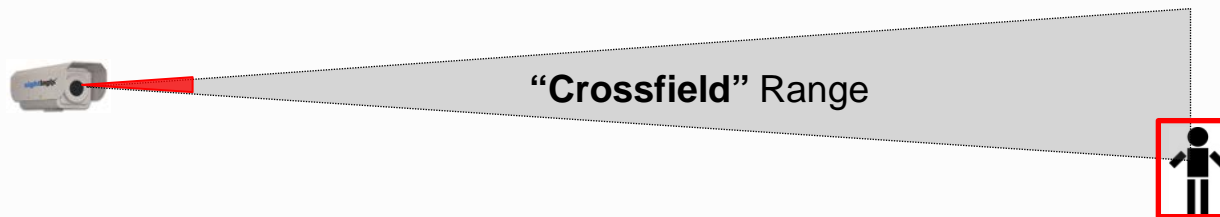


Middle East
as high as 70° C

Measuring Effective Range

“Johnson Criteria” is NOT a relevant measure of automated detection range

“Cross field” is NOT a relevant measure of automated detection range



“Inbound” is the correct way measure an analytic camera’s detection range



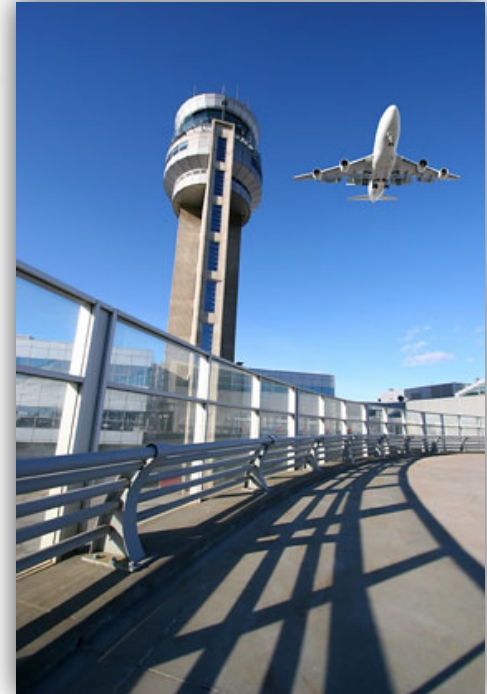
Target is hardest to detect “inbound” which is less than half the range of “Johnson Criteria” or “Cross field” detection.

Airport Video Perimeter Technologies

- ❑ Automatic Pan-Tilt-Zoom tracking targets (hands free)
- ❑ GPS location of tracked targets in real-time
- ❑ Accurate for detecting vehicles, humans, large animals
- ❑ Greatly increased buffer zone with minimal additional cost

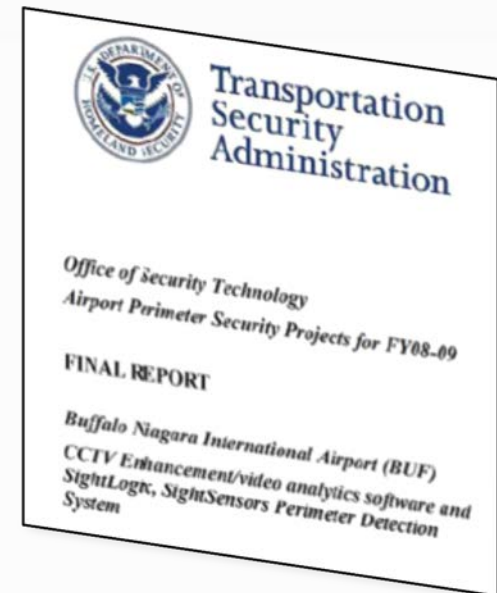
Airport References

- ❑ Buffalo Niagara International Airport
- ❑ Burbank (Bob Hope) Airport
- ❑ Daytona Beach International Airport
- ❑ Elmira Regional Airport
- ❑ Essex County Airport – Fairfield NJ
- ❑ Gerald Ford International Airport
- ❑ San Diego International Airport
- ❑ Sandefjord Airport - Torp, Norway
- ❑ Halifax Airport Pilot
- ❑ Toronto Pearson International Airport Pilot



TSA Test Reports / Safe Skies

- ❑ **SightLogix Thermal Camera and Tracking System Effectiveness Evaluation**
Report DHS/TSA—11-021 (April 2011)
- ❑ **Buffalo Niagara International Airport CCTV Enhancement/video analytics software and SightLogix, SightSensor Perimeter Detection System DHS/TSA 2600.02.01.11-033 (May 2011)**
- ❑ **SightLogix Thermal SightSensor™ NS800 Long-Range Video Detection Camera and Tracking System Effectiveness Evaluation**
Report SSDA-12-018 (May 2012)



About SightLogix

- Incorporated 2004, Princeton, N.J.
- Primary focus: Accurate outdoor intruder detection
- World-class scientists and engineers – 10 patents
- Global deployment at the world's most critical facilities



Marquee Customers



Bridges



Data Centers



DoD/Gov't Facilities



Memorials



Rail



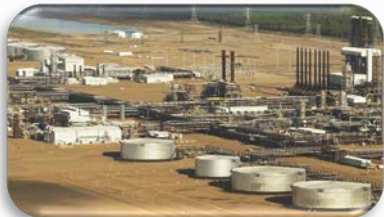
Airports



Chemical



Utilities



Refineries



Ports



Corrections



Nuclear



Making Outdoor Video ... Smarter

Questions/Answers

www.sightlogix.com