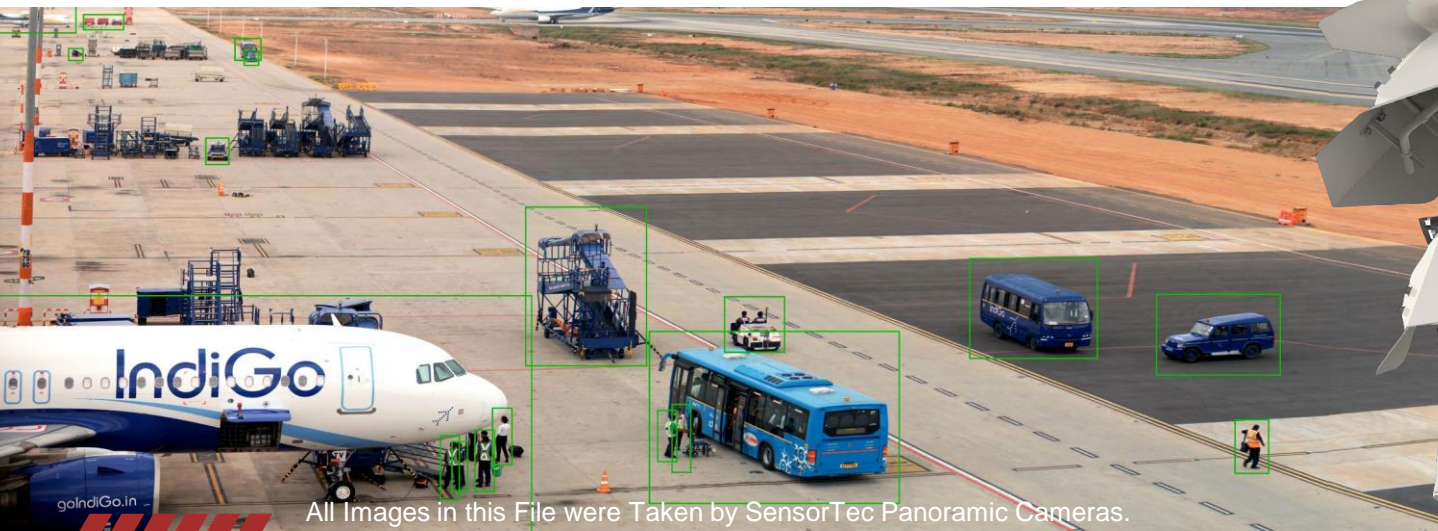# SENSORTEC
AIRPORTS SOLUTIONS

SENSORTEC AIRPORTS SOLUTIONS

SensorTec developed the best-in-class airport video monitoring solution that comprises high-end visual sensors, intelligent data processing units and a complete software package. It aids airport services by Computer Vision Technologies and supplement the scene for operators with informational augmented reality elements.

The solution facilitates airports operations and prepares airports to conveniently face pressing new directives. It ensures smooth and secure ground processes and turnarounds, and plays a key role in preventing incidents and also in investigation. As a result, it enhances airport efficiency, reduces the number of costly delays, and even shortens the system's payback period.

SensorTec airport solution is a trusted system that has been chosen already by some of the largest airports around the globe, preparing their airports for the difficulties of the new challenging era.

All Images in this File were Taken by SensorTec Panoramic Cameras.

SensorTec

SECURITY BEYOND LIMITS

In the few years since 2000, SensorTec has grown into an international company that it is today. We are among the most innovative technological companies in the world, manufacturing and developing intelligent security and surveillance solutions specifically for largescale projects for military, law enforcement, public authorities and private sectors.

We believe that serving the needs of our clients efficiently can only be achieved by delivering complete solutions. In order to achieve that, we design and manufacture all the critical components of our systems, including hardware, software and embedded computer vision. Our entire product range is manufactured and developed in accordance with the highest quality requirements.

SensorTec provides integrated solutions, which combine a wide range of devices, sensors, and software, such as surveillance cameras, surveillance radars, video analytic software and C3. All of our solutions are designed to work in harmony and provide a comprehensive multi-layer approach to deliver situation awareness and interactive intelligence.

KEY FIGURES

300+	TECHNICAL SUPPORT ENGINEER AND TECHNICIAN
4	BRANCHE OFFICES

HQ and Manufacturing Facilities:
Cambridgeshire, UK.
Budapest, Hungary.

Sales and Technical Support Offices:
Dubai, UAE.
Riyadh, KSA.

END-TO-END
SENSORTEC SOLUTIONS

Borders
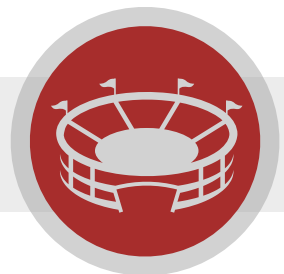Video Surveillance

Airports
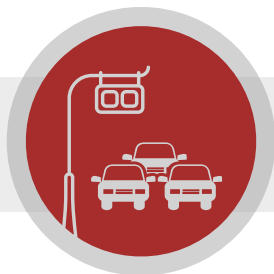Video Surveillance

Seaports
Video Surveillance

Critical Infrastructure
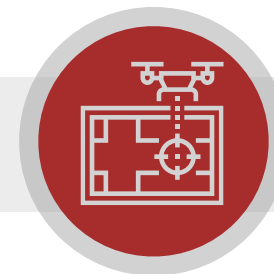Video Surveillance

Safe & Smart City
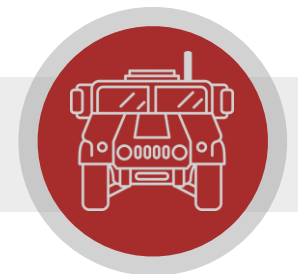Video Surveillance

Stadiums & Crowds
Video Surveillance

Traffic Management
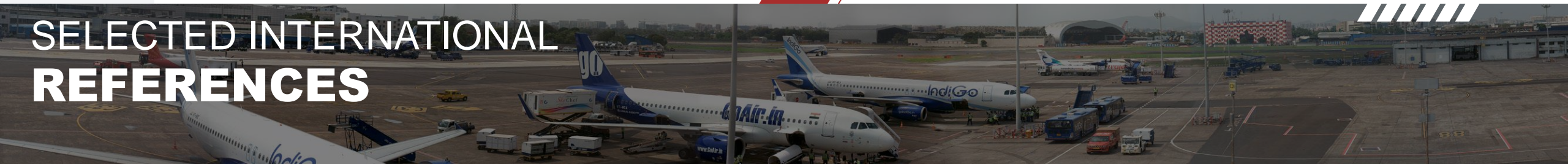& Violations Detection

Highway
Video Surveillance

Anti-Drone/UAV
Intelligent System

Mobile (In-Vehicle)
Video Surveillance

SELECTED INTERNATIONAL
REFERENCES

BORDERS SURVEILLANCE AND SECURITY
Hungarian Land Borders - Hungary.
Egyptian Land and Sea Borders - Egypt.
Kuwaiti Land and Sea Borders - Kuwait.

AIRPORTS SURVEILLANCE AND SECURITY
LaGuardia Airport - New York.
Hungarian Airport - Hungary.
Mumbai Airport - India.
Turkish Airport - Turkey.
Alexandria Airport - Egypt.

SEAPORTS SURVEILLANCE AND SECURITY
Hungarian Waterway - Hungary.
Sea Ports - Kuwait.
Sea Port - UAE.

CRITICAL INFRASTRUCTURE SECURITY
Ministry of Defense - Egypt.
Egyptian Monument Authorities - Egypt.
Manarat Al Saadiat Cultural Museum - UAE.
Private Palace - Kuwait.
Saudi Arabia Embassy - Geneva.

CITY SURVEILLANCE AND SECURITY
Delhi City - India.
Luxor City - Egypt.
Sharm El Sheikh City - Egypt.
Cairo City - Egypt.
Port Saeed City - Egypt.

STADIUMS AND CROWDS SURVEILLANCE
Manchester City Stadium - UK.
Budapest Szusza Ferenc Stadium - Hungary.
Rijeka Stadium - Croatia.
Beşiktaş Stadium - Turkey.
Atatürk Olympic Stadium - Turkey.
Fenerbahçe Şükrü Saracoğlu Stadium - Turkey.
Luzhniki Stadium Moscow - Russia.
Spartak Moscow - Russia.
Mecca Religious Sites - KSA.
Dubai Festival Plaza - UAE.
Pyramids Touristic Area - Egypt.

TRAFFIC LAW ENFORCEMENT
Traffic Management And Violation Detection - Cairo, Egypt.
Traffic Management And Violation Detection - Kuwait.
Traffic Management - Armenia.
Traffic Management - Hungary.

SensorTec

"

DON'T SETTLE FOR A PRE-BUILT SOLUTION THAT ISN'T OPTIMIZED FOR YOUR NEEDS

In SensorTec, We Design each of our High-End Airports Solutions for Maximum Effectiveness Based on your Budget and Project Requirements.

CHALLENGES OF
AIRPORTS SURVEILLANCE

Airports operate just like complex ecosystems. Even if one part changes, it affects the whole. To avoid costly delays, in addition to protecting people and assets, it has been never more important to maintain a smooth operation across the airport. Airports need to get ready for smart operations and prepare to maintain efficient control under difficult circumstances, even with less employees. Furthermore those cameras deliver visual information of only a thin defense line. Installation and maintenance is also time-consuming and expensive with a traditional system.

THE SOLUTION

In order to help rebuild airports in this new era, SensorTec created **STAARS** (**SensorTec Airport Augmented Reality Solution**).

STAARS is an intelligent solution specifically developed for airports. It can greatly enhance security and improve efficiencies across all ground operation functions. The system helps improve operational capabilities and capacities, which includes optimizing ground operation efficiency, improving safety parameters and enhancing vision for overall observation.
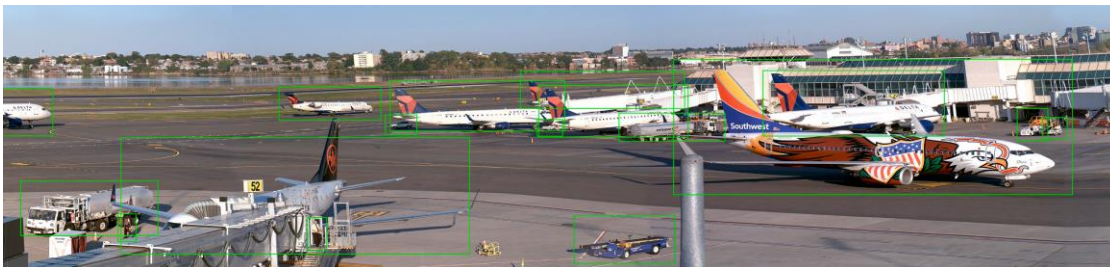
Full coverage by **361** of traditional **2MP** cameras.
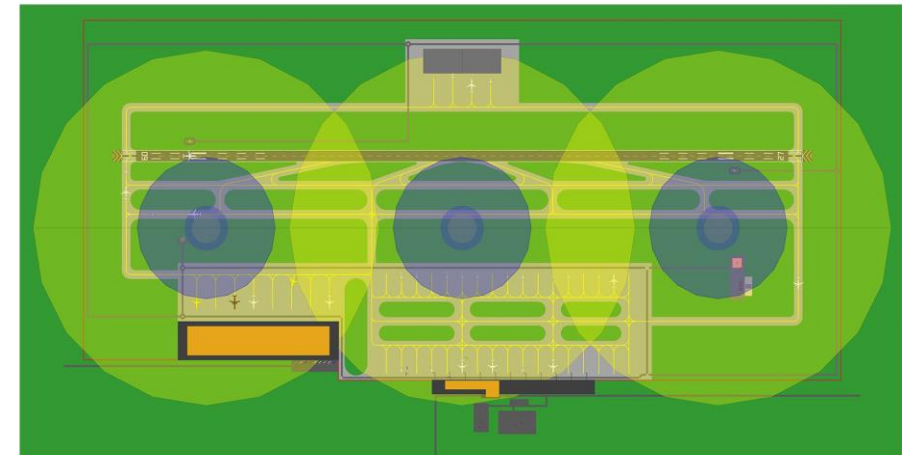
Full coverage by **6** of **200MP** panoramic cameras.

WHAT DIFFERS OUR
AIRPORTS SOLUTIONS

- SensorTec developed complex solutions focusing on the tasks that should be processed at any airport.

- SensorTec airports solutions provide Video Content Analysis specially developed to track and register object movements, and prevent incidents that may occur at any airport.

- Our intelligent software has been developed specifically for the airport application area.

- STAARS is a Real-Time Decision Making Support system. It helps operators better understand situations on the airport and faster react to them.

- Operators get various coherent visual and text information on aircraft, vehicles and ground processes from a single user interface.

- Our end-to-end solutions provide Artificial Intelligence assisted video monitoring, Augmented Reality supplemented visualization and also advanced Turnaround Management.

- Our solutions can be used by multiple airport departments simultaneously.

- We are able to integrate existent airport systems like airport operational database, radar systems, range finders and positioning systems like ADS-B, MLAT and A SMGCS.

- STAARS is able to cover even the largest airport in high resolution with only a few multi-sensor camera. It significantly reduces installation and maintenance costs and also provides better spatial transparency in the displayed camera images.

- We developed a special technology to handle large visual data and utilize the full resolution during monitoring.

- STAARS provides long storage periods, thanks to its intelligent storage management technology.

180° 300MP Panoramic Camera

PIONEERING TECHNOLOGIES
BEHIND SENSORTEC AIRPORTS SOLUTIONS

SensorTec Panoramic Technology

SensorTec panoramic technology makes it possible to geometrically stitch images of SensorTec visible light and thermal sensors. The images are taken in a synchronized fashion which precludes the possibility of duplicated or hidden objects at the stitching borders. White balance and tone correction algorithms smoothen the color gradient between the images.

Sensor Fusion Technology

SensorTec developed specific raw data level and GPS level sensor fusion technologies. Raw data analysis works with uncompressed data, therefore it provides the highest level of accuracy. It was developed for SensorTec sensors, but the system is able to fuse the data of external sensors as well. Complex data analysis means, the algorithms fuse the data of different sensors, which results in more accurate object detection and geopositioning.

SensorTec AI-Powered Video Content Analysis

SensorTec provides the most reliable VCA possible, as the algorithms run on full resolution, uncompressed image streams. This approach ensures accurate detection and tracking even at far distances. The VCA relies on several advanced methods. One of them is the Multidimensional Gaussian Background Model that always adapts to the background and differentiates every moving object from the learnt environment.

Our built-in neural network ensures that the system does not lose the relevant non-moving objects. The VCA also applies object feature extraction, motion behavior analysis and motion path estimation algorithms in order to realize an intelligent, self-learning virtual environment.

Click to watch the video
Airports Solutions - LaGuardia Airport (Night).

PIONEERING TECHNOLOGIES
BEHIND SENSORTEC AIRPORTS SOLUTIONS

Click to watch the video
Airports Solutions - PTZ Cross-Mapping.

SensorTec PTZ Cameras Cross Mapping

SensorTec high-end PTZ cameras efficiently complement the system. A special function allows the PTZ cameras to be assigned with the panoramic cameras by registering common spatial points that are visible to both cameras. This function allows operators to control the PTZ cameras by selecting the area of interest in the panoramic image.

SensorTec Intelligent Storage Management Technology

SensorTec system continuously records the videos. Thanks to our Ageing Technology, storage period of video streams can be greatly prolonged. The system intelligently drops frames from the video stream according to a configured period. As the JPEG2000 stream consists only intra-frame images, the footage will be still available after video stream ageing, but with reduced fps.

Monitoring in Full Resolution

Displaying 200-320MP panoramic images during live monitoring or archive playback is not an easy task. This amount of data can impose excessive burdens on the network infrastructure and also on client computers.

SensorTec developed a special technology to overcome this issue. The system stores the panoramic images in full resolution on the NVR, but always transmits and displays only relevant pixels. When a panoramic overview is on screen, its horizontal resolution is equal to the screen resolution. When an operator zooms in, the system sends the cropped image in higher resolution. As the zoom value increases, so does the transmitted image resolution.

Zoom Area

10

SENSORTEC AIRPORTS SOLUTIONS
MAIN FEATURES AND FUNCTIONS

Monitoring

- 200-320MP panoramic video stream with 20fps.
- 6MP thermal monitoring.
- Real-time monitoring in full resolution.
- PTZ control on panoramic images.
- Interactive map.
- Interactive object list.
- In-memory object database.
- Video History.

AI Video Content Analysis

- Registering Landings and Take-offs.
- VCA-based object tracking.
  - Detection.
  - Classification.
  - Motion information (object frames, path history, heading).
- Geofencing.
- Virtual fence.
- Situational awareness.
  - Proximity alert.
  - Collision prediction.
- Automatic traffic enforcement.
  - Overspeed.
  - Line violation.
  - Traffic light.
- Automatic FOD detection.

Turnaround Management

- Overview of all aircraft stands.
- Automatic and manual registration of ground services.
- Interactive ground service timeline and list.
- Turnaround History.
- Summarized turnaround data.

Perimeter Security

- PIDS triggered intrusion detection.
- VCA-based intrusion detection.
- Highest detection accuracy possible.
- Automatic zoom in on alarmed area.

Integration

- Positioning systems: ADS-B, MLAT, A-SMGCS.
- Radar systems and rangefinders.
- Airport information sources.

SENSORTEC AIRPORTS SOLUTIONS
FINANCIAL BENEFITS

REDUCED INFRASTRUCTURE COST
Only few cameras are needed to cover an entire airport, as a result no need to install numerous poles. The network infrastructure is far less complex and cabling is also fast and easy.

LONG LIFETIME
SensorTec leading-edge technologies ensure the system avoids both physical and technological obsolescence for a long time.

UNINTERRUPTED OPERATION
SensorTec provides uninterrupted system availability as all their components are developed to operate with high MTBF.

DESIGNED TO LAST
SensorTec systems can withstand intense weather conditions with metal constructions and built-in heating and cooling systems.

NO NEED FOR FREQUENT MAINTENANCE
SensorTec hardware components are capable of self maintenance, thanks to their built-in self-cleaning and deicing systems.

AVOIDING FINANCIAL LOSS BY PREVENTING ACCIDENTS
STAARS provides computer vision technologies to prevent various incidents, which helps avoid significant financial loss.

LESS MANPOWER
As vast airport areas can be monitored with much fewer cameras that provide far better spatial orientation for viewers and also VCA based Real-Time Decision Making Support, far less operators are needed for efficient surveillance.

SUPPORTING STRATEGICAL DECISIONS
Our system supports both short-term and long-term strategical decisions by providing information on aircraft movements and turnaround processes.

SensorTec

STAARS

INTELLIGENT AIRPORT SOLUTION WITH

AUGMENTED REALITY

STAARS
SENSORTEC AIRPORT AUGMENTED REALITY SOLUTION

STAARS fuses various technologies. The solution is a high-end video monitoring system with AI-based computer vision and augmented reality functions and it also integrates existing airport information sources. It monitors the entire airport with enormous resolution. STAARS automatically detects, classifies and tracks both cooperative and non-cooperative objects and guides the attention of operators to handle ground processes more efficiently.

STAARS augments the high-resolution video streams with informative graphical and textual elements, which help faster and better understand the view. The solution also helps prevent incidents by predicting certain proximity situations and automatically detecting various operational irregularities and FOD.
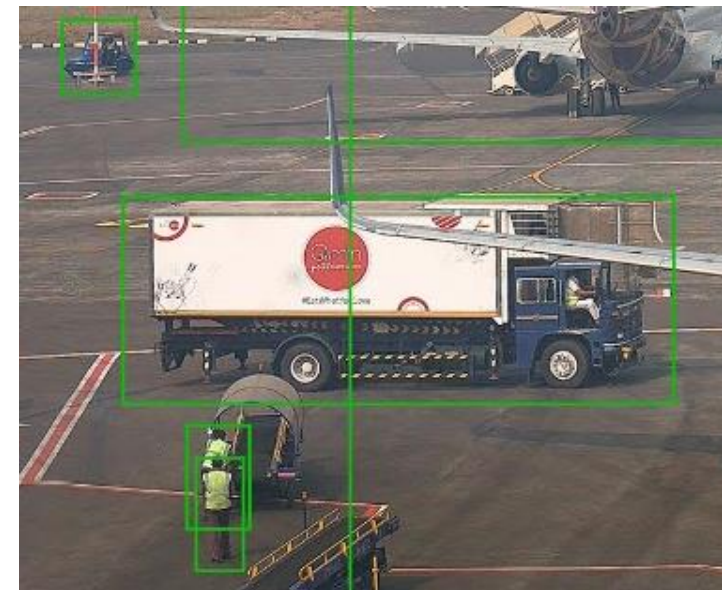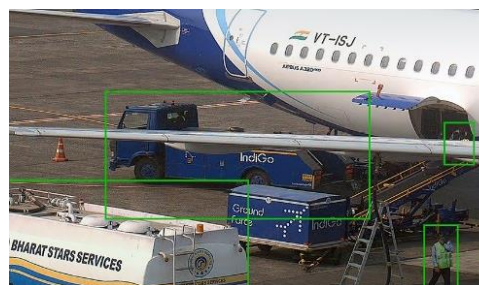
STAARS FEATURES

- Improve overall airport efficiency by monitoring and automatically analyzing object movements and ground processes.

- Enhance airport visibility for ground controllers, airfield controllers, security operators and for any airport operation department.

- Optimize ground process management and explore operational bottlenecks by bringing Artificial Intelligence and Computer Vision Technologies into airside monitoring.

- Increase safety of passengers, employees and assets at the airport.

- Enforce airport traffic rules without extra burden on operators.

- Realize access control for different types of objects at designated airport zones, using image sensors and Video Content Analysis.

- Create airport statistics on area occupancy based on automatically collected data.

- Make billing procedures fast, easy and accurate by automatically calculating the time that airplanes spend on the airport.

- Increase situational awareness to reduce the number of incidents on the airport.

- Significantly reduce the risk of incidents caused by FOD, using automatic detection methods.

- Facilitate incident investigation and get irrefutable visual evidence in already occurred cases.

- Optimize turnaround times and create useful statistics on ground handling efficiency.
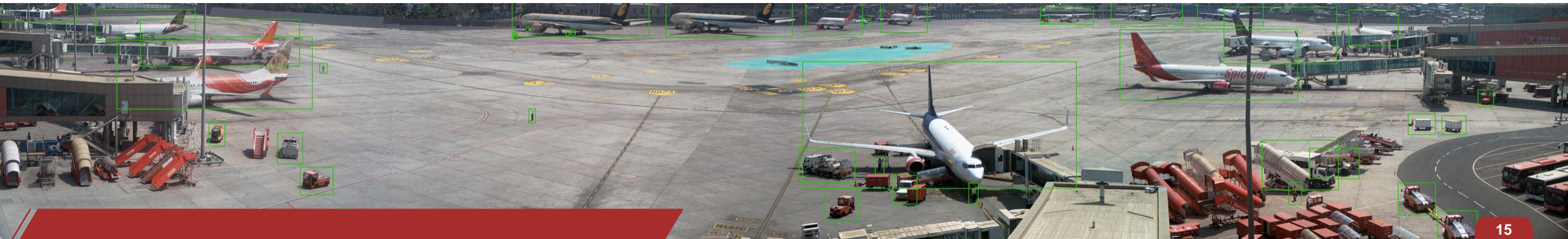
DESIGNING
YOUR PROJECT

3D MODEL OF VISUAL COVERAGE
SensorTec starts each project with a customized 3D plan, which helps optimize camera arrangement, the necessary resolution and coverage at the airside, according to client needs.
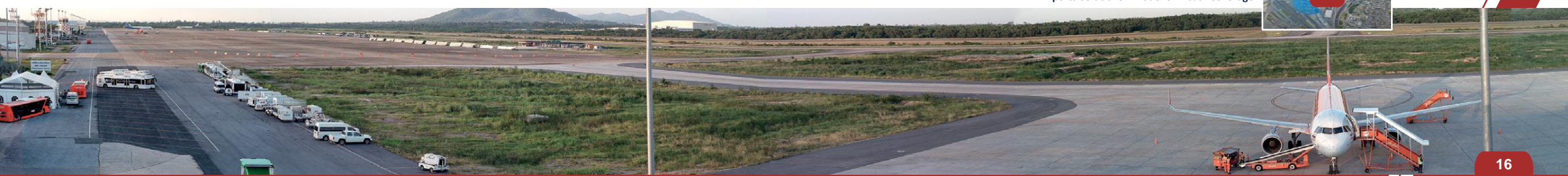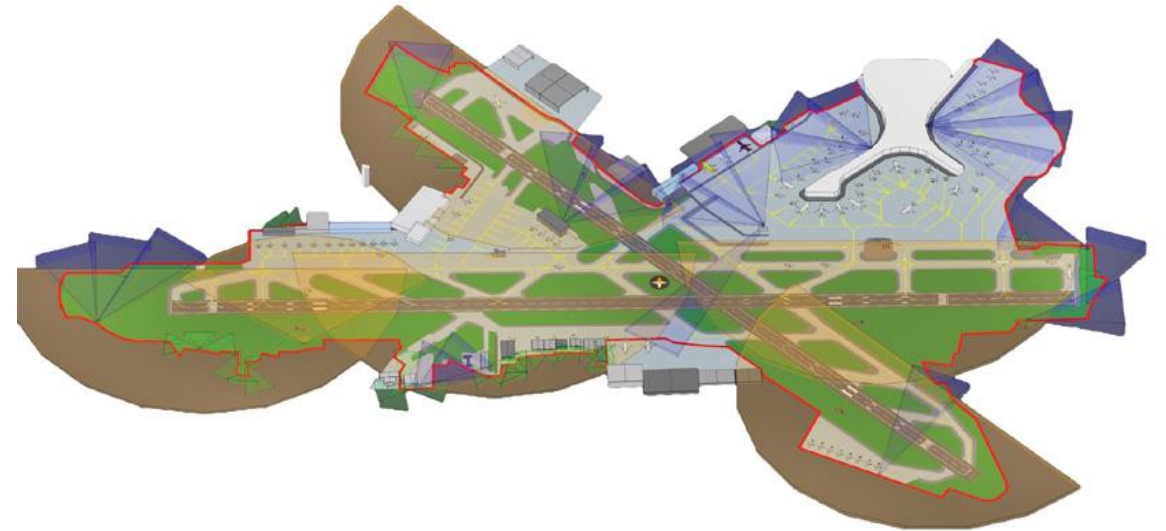
ADAPTABLE SYSTEM STRUCTURE
We always consider the specific structure and characteristics of airports to best adapt the system for the current project. Moreover, STAARS has a flexible hardware structure that can be easily rearranged in case of future airside developments.

SYSTEM EXTENSION
SensorTec airports solutions are designed to be flexible for future developments. Both the covered areas and also system functionality can be extended easily on demand.

Click to watch the video
Airports Solutions - Model of Visual Coverage.

SensorTec

Video Wall

Client Workstations

Airport Control

Ground Handling Management Support

Optional clients

**Security - Fire - ACDM
Disaster Management - DAM - etc….**
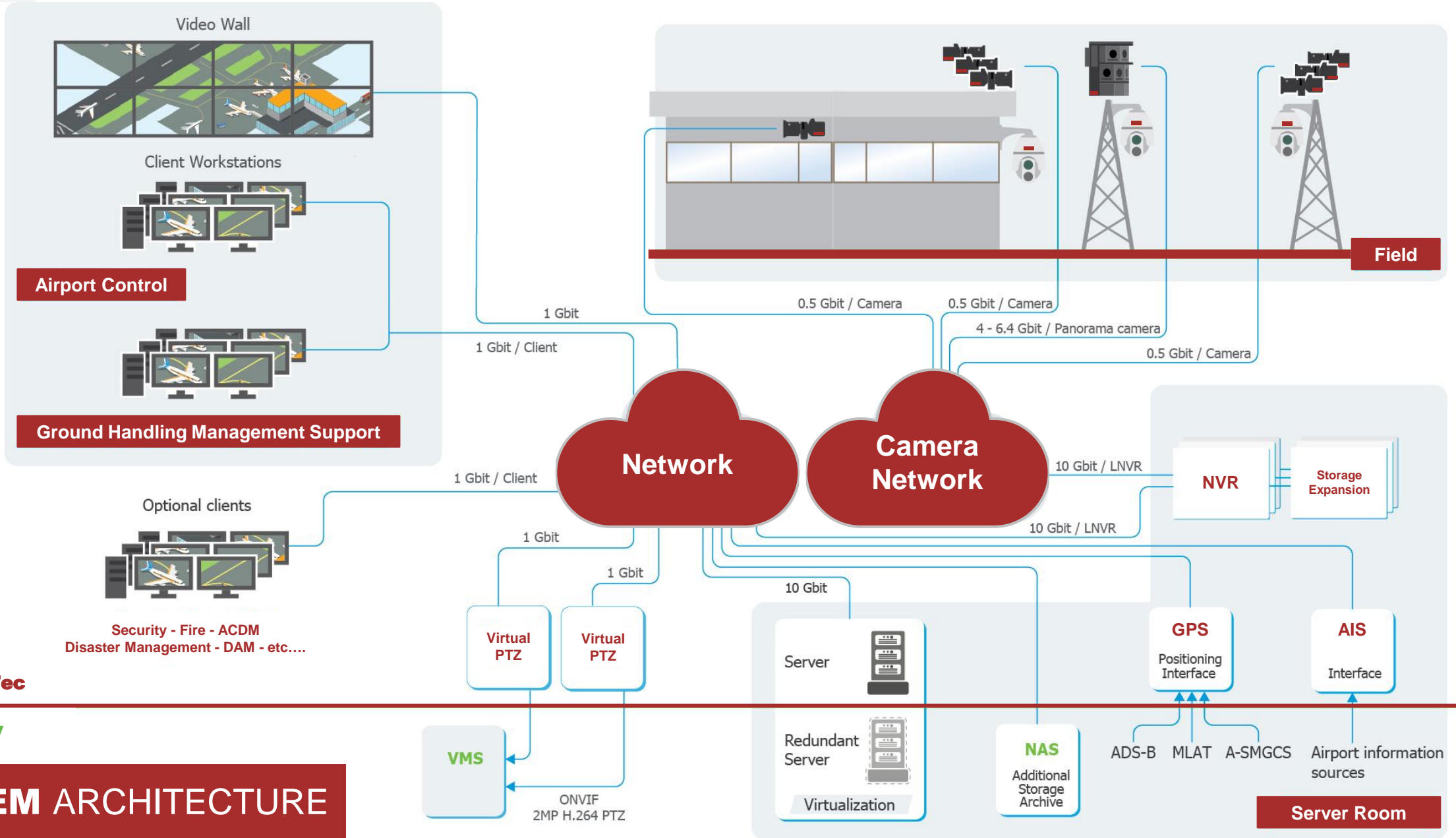
SensorTec

3rd Party

SYSTEM ARCHITECTURE

Field

0.5 Gbit / Camera
0.5 Gbit / Camera
4 - 6.4 Gbit / Panorama camera
0.5 Gbit / Camera

1 Gbit

1 Gbit / Client

1 Gbit / Client

Network

Camera Network

10 Gbit / LNVR

NVR

Storage Expansion

10 Gbit / LNVR

1 Gbit

1 Gbit

10 Gbit

Virtual PTZ

Virtual PTZ

Server

Redundant Server

Virtualization

NAS

Additional Storage Archive

GPS

Positioning Interface

AIS

Interface

ADS-B   MLAT   A-SMGCS   Airport information sources

Server Room

VMS

ONVIF
2MP H.264 PTZ

AIRPORT COVERAGE
AND VISUAL ENHANCEMENT

STAARS provides video monitoring with extreme high-resolution to observe everyday operations at the airport. These images can effectively supplement normal observation. SensorTec panoramic cameras sensors provide vision at a much higher performance, than the human eye is capable of. These sensors constantly take images of the entire airport areas with enormous resolution and the embedded intelligence continuously analyzes the view.

The entire airport can be covered using only a few panoramic cameras. These cameras are interconnected and provide a comprehensive coverage. Within the covered area objects are tracked uninterruptedly, even when they move across multiple camera images.

SensorTec panoramic cameras deliver 100-320MP video streams at up to 20fps, which forms a revolutionary quality improvement in video monitoring. It means users can watch a continuous live stream and zoom in on any area of interest and get fine details even at far distances. In areas without artificial lighting, SensorTec thermal image sensors deliver useful visual Information.

Click to watch the video
Airports Solutions - Full Runway Coverage.

Zoom Area

18
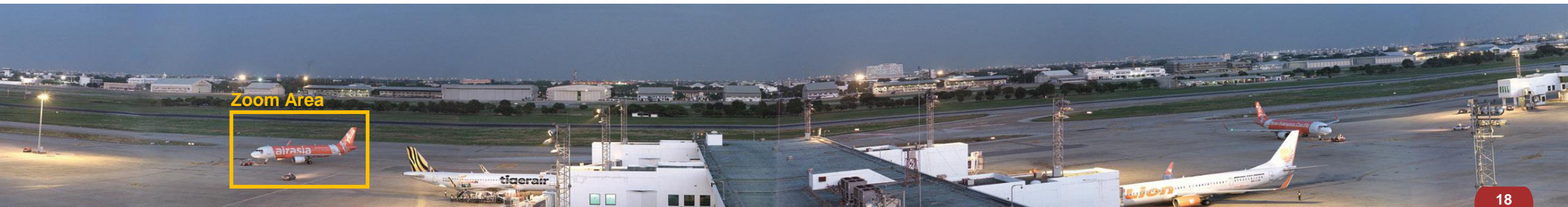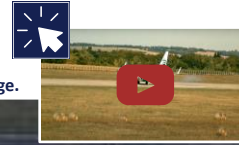
MONITORING WITH
PANORAMIC CAMERAS

Even a single SensorTec panoramic camera can monitor vast area. Viewing large panoramic images, users have better spatial orientation within the observed area, as the space is not split by individual images on a confusing monitor profile.

STAARS provides efficient monitoring under all occurring lighting conditions at the airport. Users can easily track airplane and ground vehicle movements throughout the airside even in bad weather conditions and also at night.

In areas that are not lit by artificial light, SensorTec Dual Vision Panoramic Cameras can be used, which has a thermal panoramic extension with up to 6MP resolution. The visible light and thermal sensor cluster observe the very same area, but they utilize different electromagnetic radiations to provide informative visual data in all circumstances.

RECORDING AND
ONLINE ARCHIVE

SensorTec system continuously records images and stores them in a fail-safe file system, distributed among many HDDs. In case of any negligence or accident the situation can be investigated by reviewing the footage in full resolution. As the video stream consists only intra-frame coded JPEG2000 images, any frame can serve as irrefutable visual evidence in critical situations.

In STAARS software, operators can search the archive during real-time monitoring if necessary. The archive search is not time based, instead operators search for objects and their registered movements and statuses to load the footage of interest.

Zoom Area

VIDEO HISTORY AND
ARCHIVE SEARCH

STAARS provides fast archive search, based on the in-memory airport history database. The function allows to search for specific incidents, designated area movements and also for particular objects. In order to search effectively within this huge amount of information, multi-level filtering is available.

For instance, operators can filter for a specific violation type committed by a certain object class within a desired time period. They can also list certain object statuses concerning for specific areas, which contributes to create useful analyses.

To provide an even more targeted example, operators can check all registered airplanes that moved on a selected taxiway within the time frame of interest. They get the exact number in no time, and they can get the visual confirmation on demand.

High-resolution videos are available for each list items, even from multiple camera angles. Selecting a list item, the program displays thumbnail images from all relevant cameras, therefore operators can download those videos that best fit their needs.

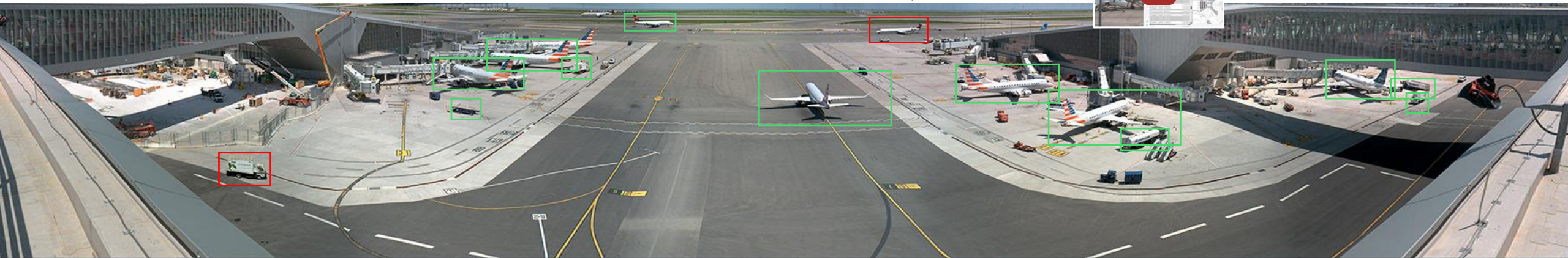# INTELLIGENT AIRPORT CONTROL
WITH AUGMENTED REALITY

Beyond recording and displaying video streams with enormous resolution, STAARS increases the efficiency of monitoring by providing numerous intelligent functions based on Video Content Analysis (VCA).

These functions can effectively aid operations at the airport, as they are able to automatically detect and even predict several incidents, furthermore they help optimize airport processes.

Automatically generated warnings and alerts guide the attention of operators. Real-time Decision Making Support (RTDMS) intelligently optimizes the front end visualization of all signals generated in the system.

Based on operator intentions, it filters the large number of situations and highlights only the relevant ones.

This way, operators can always focus on the most important situations occurring at the airport. This function results in better situational awareness during airside operations and it also helps prevent incidents.

Click to watch the video
**Airports Solutions - STAARS Features.**

21

LANDING AND **TAKE-OFF**

STAARS detects the moment of landings and takeoffs with great precision. The module automatically detects and registers the very moment when aircraft wheels touch or leave the runway. It also saves evidence images with time codes in the image header. It compiles detailed reports, which can be later reviewed fast and easy.
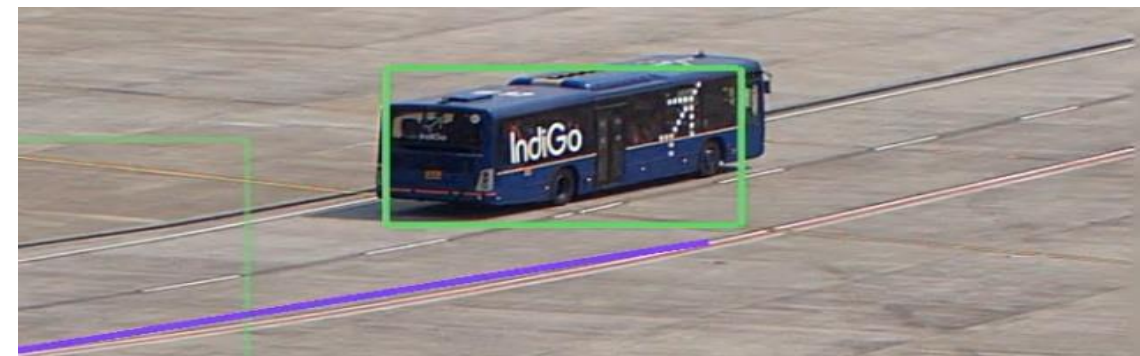
In case the system receives transponder data, it automatically calculates the exact time that airplanes spend at the airport. This function significantly simplifies billing procedures.

Zoom Area
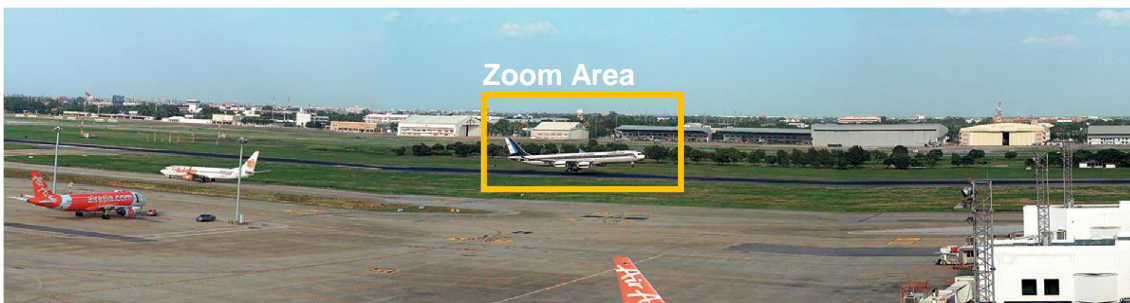
OBJECT **TRACKING**

Our VCA algorithms are developed to accurately detect, track and classify objects under various visibility conditions. Both cooperative and noncooperative objects can be classified and tracked. The VCA differentiates five basic types of objects (aircraft, heavy and light vehicle, human, FOD). Filtering is available for these objects on the monitoring interface.

Beyond tracking objects on the airside, STAARS gives information on their position. The solution provides real-time GPS coordinates for both cooperative and non-cooperative objects. Additionally, the system is able to receive position information of cooperative objects from integrated airport systems, like ADS-B and MLAT. Utilizing this feature the system is able to provide more accurate geopositioning.

13028526	13021004	13028199	13027084	13028827	13027085
19.096980 72.876090 0.0 Kmph	19.096730 72.879700 0.0 Kmph	19.096960 72.876090 0.0 Kmph	19.096810 72.876150 0.0 Kmph	19.096610 72.876790 11.0 Kmph	19.096090 72.879970 0.0 Kmph

GEOFENCING AND VIRTUAL FENCE

STAARS geofencing function allows to virtually map existing airside zones on camera images. These configured zones facilitate orientation and accelerate object search for operators. They can easily find objects during live monitoring or archive search, as the objects always carry their current zone IDs. Operators can also filter for zones to list all their current objects. Geofencing function also allows to virtually assign various object and/or time-based airside rules to the designated zones.

Operators can designate temporary zones and they can define various rules to these areas. They can simply draw around a static object or a desired area and apply relevant rules. The activated rules take effect on this area and trigger different warnings or alerts.

SITUATIONAL AWARENESS

With the help of computer vision technologies STAARS is able to enhance situational awareness at the airport. VCA-based features help prevent incidents by tracking real-time position of objects, predicting their future status and alerting users in time.

Proximity alert function uses dynamic proximity areas around objects. The size of these areas vary based on object type, speed and airport zone. In case the proximity areas of objects are overlapping, the system immediately alerts the user. This function mostly protects parking aircraft and vehicles from dangerously moving objects.

Collision prediction function helps prevent collisions among moving objects by applying Motion Behavior Analysis and Motion Path Estimation. The system analyzes the motion dynamics of the moving objects and calculates their motion vectors. In case the motion vector of an object is pointing to another one, the system predicts a possible collision area and alert operator instantly who can react in time and warn the pilots or drivers. If the objects seem to miss collision the warning or alert signal ceases immediately.

FOD DETECTION

Foreign Object Debris can cause serious damage to airplanes and severely injure personnel, therefore it is essential to clean all AOA areas from them. Despite preventive FOD awareness, FODs constantly form on the runways, taxiways and aprons.

It is very difficult to explore the entire airside area by general FOD inspection and FOD walks. To help collect FOD, STAARS provides an automatic FOD detection function. Beside inorganic FODs (stones, plastic foils, tools, aircraft parts, dolly wheels or bolts, screws, etc), STAARS is able to detect and classify animals on the airside. The size of the detectable FOD only depends on the applied resolution, which is always customizable.

The function does not just recognize FODs, but it also supports the entire FOD management operation and helps investigate FOD formation. The function registers the source object which the FOD comes from (human, aircraft, dolly, etc.). It also provides information on exact FOD geoposition.

To handle the situation, operators first virtually fence the FOD area. They send inspectors to collect the FOD and when it has done, they acknowledge the process. All actions are recorded automatically which can be later reviewed if necessary.

Click to watch the video
Airports Solutions - FOD Investigation.

FOD Source Object: Human.

FOD Automatic Record Database.

AUTOMATIC TRAFFIC ENFORCEMENT

STAARS provides several traffic violation detection at the airport for both cooperative and noncooperative vehicles. Different rules can be specified for different type of vehicles in different areas. The system effectively detect overspeed, line, traffic light and parking violations within the monitored areas. In case a vehicle is violating a traffic rule, the system generates a warning immediately and signs it on the monitoring interface. The function does not just detect traffic violations, but also registers them and save an evidence image.

FRONT END **VISUALIZATION**

The front end interface is responsible to display and structure the information generated by all STAARS functions. Operators use different forms for real-time monitoring, searching in video history, investigating violations and reviewing registered landings and take-offs. Ground handling operators perform their work in the Turnaround Management form.

The real-time monitoring form displays the most versatile functions but it still delivers clarity and usability. Its modular design ensures flexible interface customization even on multiple screens. All interface modules are interconnected with each other, all information is displayed in a synchronized fashion.

The interface contains a large overview video stream with informative AR visualization. Separate zoom windows provide detailed close-ups of the area of interest. An interactive map provides additional information on object positions. A detailed object list contains all detected objects with all their current and previous statuses, which are recorded in an in-memory database. Operators can load previous object statuses in no time and watch archive on the fly if needed.

STAARS generates informational labels with collected data and associates these with the detected objects. Clicking on the desired label, the related object is highlighted in the panoramic video. Operators can select an object on the displayed image and in the object list as well. This way they get information on airplanes quickly and they can easily track all their movements throughout the airside. Also, noncooperative objects get labels but with moderate information. The zoom window can be locked to automatically track any selected object.

TURNAROUND **MANAGEMENT**

STAARS was developed with the intention to facilitate general monitoring and make airport ground processes more efficient. STAARS transforms complex monitoring tasks into intuitive operations on a single platform. It provides faster decision making as it fuses multiple high-resolution video streams together with helpful object information generated by Video Content Analysis and integrated airport data feeds. This way operators get extra visual and text information on the user interface, which helps guide their focus on the most important situations.

Detailed information can be found on STAARS Turnaround Management brochure.

PERIMETER **SECURITY**

STAARS detects perimeter intrusions. Existing PIDS can be integrated in the system. The generated alarm signals trigger the visible light and thermal panoramic cameras and also the PTZ to automatically zoom in on the alarmed area.

STAARS is able to precisely track the motion of the detected intruder, thus operators can easily follow the situation and react quickly. It effectively avoids false alarms.
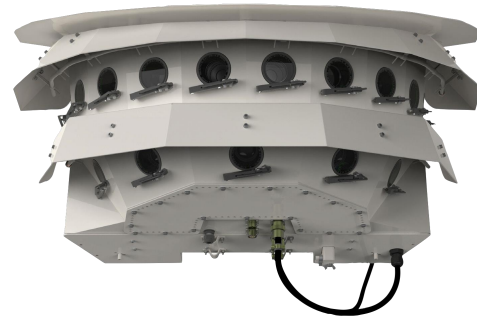
KEY SYSTEM COMPONENTS

180° 200MP
Panoramic Camera

180° 300MP
Panoramic Camera

6MP
PTZ IR Camera

SensorTec 4th Generation
Indoor Rack-Mount NVR

40° 320MP Dual Vision
Panoramic Camera

40° 320MP
Panoramic Camera

20° 20MP
Fixed Camera

SensorTec 4th Generation
Outdoor NVR

STRENGTHS OF OUR
AIRPORTS SOLUTIONS

- SensorTec visible-light and thermal cameras provide high-resolution panoramic images that ensures users an enhanced vision throughout the airport.

- Our solution uses the scalable JPEG2000 image compression, which is the only standard that allows for real-time monitoring with hundreds of megapixels in a bandwidth effective manner.

- SensorTec Video Content Analysis is embedded in the cameras and Network Video Recorders. It works with full resolution JPEG2000 images.

- Based on advanced Video Content Analysis the solution detects, tracks and classifies both cooperative and non-cooperative objects at the airport.

- A special software function provides informative, moving labels that tied to both cooperative and non-cooperative objects. This way, aircraft types, registration numbers and flight numbers can be displayed along with the detected objects.

- SensorTec makes it possible to cover the monitored area with virtual layers both temporary and permanent and assign specific rules to them.

- SensorTec solution automatically detects traffic related violations, proximity situations, predicts possible collisions and detects FOD throughout the movement area and the apron.

- Using Real-Time Decision Making Support, operators can effectively filter numerous objects, incidents and situations and highlights only the most relevant ones.

- Our solution integrates Airport Systems like Airport Operational Database, Radar Systems, Range Finders, ADS-B, MLAT and A-SMGCS and fuse these data with the VCA data flow.

- SensorTec system is able to ensure redundancy for all types of hardware elements.

- Our system ensures to monitor the status and manage the progress of ground handling services during turnarounds, record and summarize all data and prepare them for post-analysis. This module of the system can also be aided by Video Content Analysis, further expanding system automatism.

Click to watch the video
Airports Solutions - Night Vision.

SensorTec

9V-SQN
Singapore Airways
Boing 777-212(ER)
19.093343, 72.872785
3.5 mph

F396
MIAL
Pushback truck
19.093373, 72.872782
3.5 mph

Human
-
Non-cooperative
19.093361, 72.873834
0.7 mph

CONTACT US

SensorTec Security Systems

www.sensortec-eu.com | sales@sensortec-eu.com

SensorTec UK
Sydney House,
62 Lancaster Way, Ely,
Cambridgeshire, UK.
+44 1353 523549

SensorTec UAE
701 Thuraya Tower 1,
Dubai Internet City,
Dubai, UAE.
+971 4 367 0351 | +971 50 496 1750

SensorTec KSA
Prince Muhammad Ibn Saad
Ibn Abdulaziz Rd,
Riyadh, KSA.
+966 53 222 2848