

iFerret™

intelligent Airfield/Runway Surveillance and
Foreign Object & Debris (FOD) Detection System



Competitive Advantage through Technology



iFerret™, The Future of Airfield Safety and Security

Approved by the US Federal Aviation Administration (FAA), iFerret™ is the world's first *intelligent* Vision-based Foreign Object & Debris (FOD) Detection System that provides real-time, automated FOD detection, location, measurement, classification and recording.

Using Stratech's *intelligent* Vision software and state-of-the-art Electro-Optic (EO) Sensors, iFerret™ automatically detects, locates, measures, classifies and records FOD in commercial airports and military air bases. Upon detection of FOD, iFerret™ enables operators to zoom in on the subject for visual verification before sending a remote alert to the recovery team to remove the FOD.

Key Benefits of iFerret™

• Superior image quality

- High-definition (HD), colour images
- Sharp images for user validation → No false alarms/ unnecessary runway closures

• Revolutionizing Airfield Night Vision

- Provide HD resolution images in colours even under zero ambient light condition



• Automatic zoom feature

- Upon FOD detection, EOS will automatically zoom in on FOD for verification
- After visual verification, the EO sensor automatically zooms out to continue scanning for other FOD

• All-weather operations

- FAA Performance Assessment Report, March 2012: "able to perform satisfactorily in night-time, daytime, sun, rain, mist, fog and snow conditions, as required by FAA Advisory Circular 150/5220-24"
- EOS and outdoor equipment are designed with at least IP65 certification

• High-definition (HD) full runway view

- HD, colour panoramic view of entire runway
- Enables remote runway clearance and review of chronology of events during incidents



Panoramic view of the runway

• Zero emissions

- Totally passive, zero-emissions
- Future proof: No interference with
 - Other existing airport systems and aircraft systems
 - Other future airport systems and aircraft systems

• Quick detection time

- Detection time of 60 seconds (day) and 120 seconds (night) on average

• Location and detection precision

- Average accuracy of ± 1 m (3.28 ft) - Quicker removal of FOD, especially at night
- Able to locate and differentiate multiple FOD in close proximity
- Detects objects as small as 4cm (1.57 inches)
- Detects FOD of any material, even radar-absorbing material

• Coverage redundancy

- Built-in coverage redundancy
- Ensures 100% system operability automatically

• Powerful zoom capability, upgradable to 200x zoom

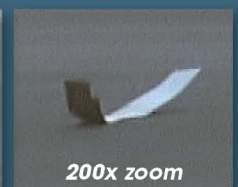
- Can be configured with a variety of zoom options including long zoom ranges of up to 2,000mm focal length.
- Enable unparalleled visual verification and identification of FOD upon detection, which is the most important step the operator takes to assess the threat, prior to determining a runway closure for removal of FOD
- Also effective for long-range iFerret™ surveillance of the airside such as airport operations area (runways, taxiways, apron areas)



FOD Detection



70x zoom



200x zoom

Intelligent FOD Management System, powered by iFerret™

- Integrated FOD Knowledge Management system
 - Centralised repository of FOD images and data
- Knowledge Base (which contains the domain expertise) and Expert System
- Standardised Automated Workflows to provide FOD risk assessment & risk management
- Automation of FOD risk assessment and recommendation of risk mitigation measure
- Comprehensive reporting
 - Trend Analysis Reports, FOD Hazard Assessment Report and FOD Risk Assessment Reports



iFerret™ Operations Workflow

Step 1	: Dedicated Inspection	Each Electro-optic sensor scans a sector on the runway. It scans by capturing images of subsectors. The individual images are stitched together to provide a panoramic overview of the runway.
Step 2	: FOD Detection	iFerret™ processes captured images to detect FOD in real-time.
Step 3	: Real-time Alert	Audio and video alert with FOD information.
Step 4	: Visual Verification	Zoom-in view of detected FOD for visual verification.
Step 5	: Remote Alert	Alert via mobile devices to facilitate efficient recovery.
Step 6	: FOD Removal	Rapid recovery of FOD.

iFerret™ Is More Than FOD Detection

Comprehensive Airfield Surveillance

- The only system that can be extended to cover beyond runway
- Comprehensive monitoring of safety and security in the airfield 24 x 7 x 365

iFerret™ Night Vision Capability

- Unprecedented night visibility
- For visual monitoring and validation of threats to safety and security in low-light conditions

Unlawful Seizure of Aircraft

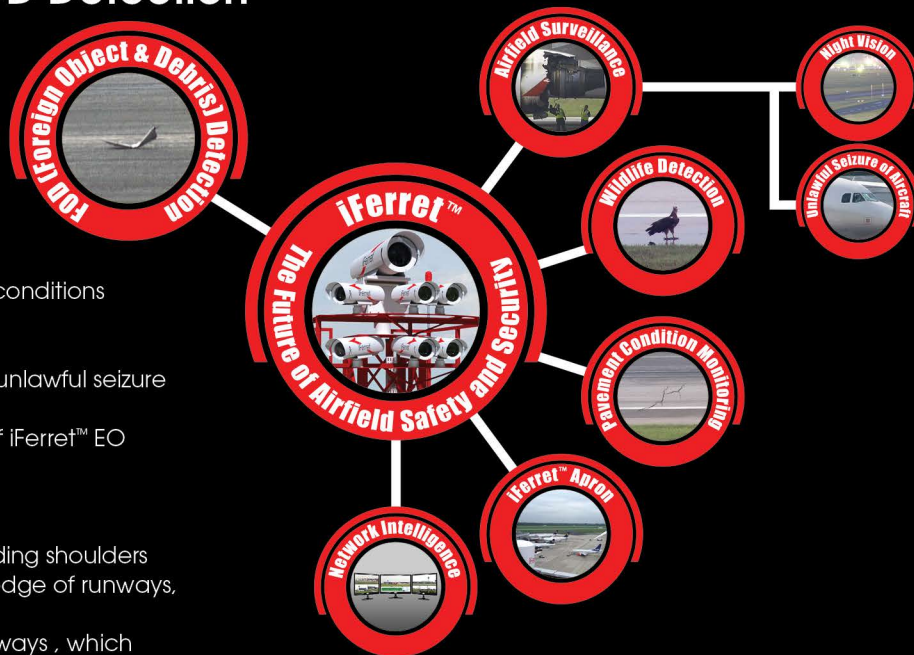
- Security surveillance for "Anti-Hijacking"- unlawful seizure of aircraft
- Enables remote command and control of iFerret™ EO Sensors from a security headquarter

Wildlife Detection

- Able to detect wildlife on runways - including shoulders behind the edge lights and beyond the edge of runways, such as infield areas.
- Instant wildlife/birds detection on the runways, which complement avian radar that only detects birds in the air
- Constant and accurate monitoring/tracking of wildlife location for removal team guidance
- Allows for monitoring of seasonal patterns and trending

Airfield Pavement Condition Monitoring

- Detect abnormal pavement conditions, such as crack, pothole, loose premix, vegetation and water ponding
- Monitors the quality of the pavement after completion of construction/rehabilitation works



Apron Monitoring

- 24 x 7 x 365 apron safety and security surveillance
- Also aids in assessment of service/efficiency levels

Network Intelligence

- Central Command & Control console for integrated monitoring and control of iFerret™ and other airside surveillance functions/systems
- Can even perform integrated monitoring across several airports.

iFerret™ Selected By



Miami International Airport (USA)



Hong Kong International Airport



Dubai International Airport (U.A.E.)



Airbase of one of the World's Top Air Forces



Chicago O'Hare International Airport (USA)
- Performance Assessment



Changi International Airport (Singapore)

iFerret™ complies with the following specifications from aviation regulatory bodies:

- **Approved Electro-optical FOD Detection System** in "Airport Foreign Object Debris (FOD) Detection Equipment" Advisory Circular (AC No: 150/5220-24) issued by the U.S. Federal Aviation Administration (FAA) in September 2009
- **FOD Management System in compliance with** "Airport Foreign Object Debris (FOD) Management" AC No: 150/5210-24 issued by the FAA in September 2010
- **FOD Detection System in compliance with Annex 14 of the International Civil Aviation Organisation (ICAO) Standards:** The surface of pavements (runways, taxiways, aprons and adjacent areas) shall be kept free of loose stones or other objects that might cause damage to aircraft structures or engines, or impair the operation of aircraft systems.

Product Specifications

Sensor	Full HD, ultra low light level Electro-Optic (EO) Sensors
Position Accuracy	< 1m (3.2ft)
FOD Detection Size	Down to 4cm (1.57 inches) or better
Detection Rate	90% and above
Detection Time	Average of less than 60 seconds for Day detection and 120 seconds for Night detection
Alert Types	Audio and visual, remote alert via mobile devices
Event Log	Date/Time stamp, location, classification and image
Video Recording	One month, with option for up to two years
Operating Temperature	-32°C ~ +55°C (-25°F ~ +131°F) - with environmental control
EMC/EMI	Zero interference with airport and aircraft systems
Built-in Redundancy	Backup coverage by adjacent electro-optic sensors
Detection Coverage	Runways, taxiways, aprons, aircraft hangars and flight deck of aircraft carriers
IP Rating	With at least IP65

Note: Product specifications subject to change without notice.

Stratech Aerospace Pte. Ltd. (Co. Reg. No. : 200720756K)

(A Member of The Stratech Group)

31 International Business Park, #02-02 Creative Resource, SINGAPORE 609921

Tel: (65) 6323-2188 Fax: (65) 6323-2177 Email: Stratech@TheStratechGroup.com

Stratech Aerospace, Inc. (DUNS No. : 07-851-6159)

(A Member of The Stratech Group)

245 Park Avenue, 39th Floor, New York, NY 10167, USA

Tel: (1) 212-372-8890 Fax: (1) 212-795-4001 Email: Stratech@TheStratechGroup.com

www.TheStratechGroup.com

Copyright © 2016 The Stratech Group. All rights reserved. iFerret™ is trademark or registered trademark of The Stratech Group and its subsidiaries in Singapore and other countries. All other trademarks are the property of their respective owners. All hardware and software specifications are subject to change without notice.