

Introducing an industry-leading FOD detection system that is tried and tested

iFerret™ 2.0 unique features have made it the preferred FOD detection system of major airports worldwide.



Intelligent vision software

Powered by state-of-the-art Electro-Optic (EO) sensors for precise detection.



Performs under all conditions

Operates reliably in low light, rain, fog, and snow as long as the runway remains operational.



Automated, fast & accurate

Detects, measures, classifies, and records FOD with high efficiency.



Real-time, 24/7 monitoring

Generates audio and video alerts with detailed FOD information.



Powerful optical zoom

Provides a zoomed-in view of detected FOD for accurate visual verification.



Recording & analysis

Each electro-optical sensor scans specific runway sectors, capturing images for in-depth analysis of subsections.



NCS is a leading technology services firm with presence in Asia Pacific and partners with governments and enterprises to advance communities through technology. Combining the experience and expertise of its 13,000-strong team across 57 specialisations, NCS provides differentiated and end-to-end technology services to clients with its NEXT capabilities in digital, data, cloud and platforms, as well as core offerings in application, infrastructure, engineering and cybersecurity. NCS also believes in building a strong partner ecosystem with leading technology players, research institutions and start-ups to support open innovation and co-creation. For more information, visit ncs.co.

In compliance with specifications from

| FAA AC 150/5220-24 and AC 150/5210-24 | ICAO Annex 14 | EUROCAE ED-235A |

For more information, visit www.ncs.co

For more NCS transport solutions, scan the QR code



As the company managing Singapore Changi Airport, one of the busiest international airports in the world, CAG oversees the key functions of airport operations and management, air hub development, commercial activities and airport emergency services. CAG also operates Singapore's other airport, Seletar Airport, and through its subsidiary Changi Airports International, invests in and manages airports around the world. As one of Asia's most connected international aviation hubs, Changi Airport handles more than 7,400 flights weekly, with one flight taking off or landing every 80 seconds.

iFerret™ is deployed in:

| Singapore Changi Airport | Dubai International Airport | Hong Kong International Airport |

For more information, visit www.changiairportgroup.com
Please contact us at business.development@changiairport.com



iFerret™ 2.0

AI-powered foreign object debris (FOD) detection

An advanced AI-powered Foreign Object Debris (FOD) detection system designed to enhance runway safety and reduce risks through intelligent automation. Developed by NCS and owned by Changi Airport Group (CAG), the system uses real-time analytics and machine learning to quickly detect and verify FOD. Equipped with high-definition electro-optical sensors and proprietary AI software, it ensures reliable detection in various weather conditions, allowing rapid removal and seamless runway operations.

Stay ahead with iFerret™ 2.0 - where AI meets airside safety.



a persistent threat demands round-the-clock protection

Foreign Object Debris (FOD) related incidents cost the aviation industry billions of dollars annually. iFerret™ 2.0 delivers cutting-edge, AI-powered detection to identify and eliminate FOD with precision, reducing risks and ensuring uninterrupted runway operations.

IMPACT OF FOD THREATS

USD**22.7B**

in Damages per year

Source: Federal Aviation Administration (FAA)

USD**4.0B**

spent on Aircraft Repair per year

Source: Boeing

12%

of Total Aircraft Incidents

Source: ICAO

VISUAL CONDITION FACTORS



Night - time

Limited number of manual inspections a day.



Fog

Runway closure is an opportunity cost.



Rain

Longer inspection intervals increase the risk of the presence of FOD.



Snow

Human errors can occur.

proven performance

superior
image quality


2MP

Full HD coloured images (2 megapixels) even under low-light condition.

rapid
detection time

 **60s**
 **120s**

60 seconds for FOD detection in the day and 120 seconds at night.

high detection
performance

 **4cm**
 **>95%**
 **1m**
±

Detect objects as small as 4 cm.
>95% detection rate
+/- 1 m location accuracy

all-conditions
capability



Performs satisfactorily in both day and night, under all weather conditions – sun, rain, mist, fog, and snow.

(FAA Advisory Circular 150/5220-24)

multiple usage

Wildlife detection

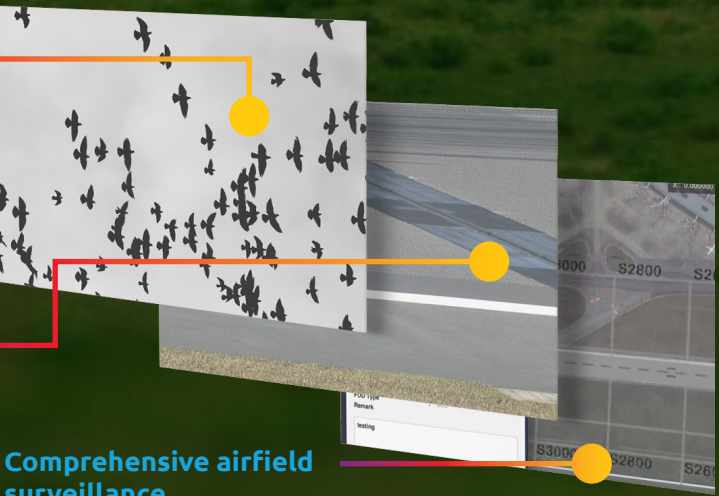
Instant wildlife detection on the runway to complement avian radar detecting birds in the air.

Constant and accurate tracking of wildlife location to guide the removal team.

Airfield pavement condition monitoring

Detect abnormal pavement conditions (e.g. loose premix, vegetation, water ponding).

Monitor pavement quality after runway works.



Comprehensive airfield surveillance

Runway video surveillance in times of aircraft incidents.

Footage for post-incident analysis and reporting.

unparalleled advantages

Ease of installation

iFerret™ 2.0 is a passive system that does not interfere with aviation systems or pose health hazards. Licensing and approval of radar frequency is not required. Modification to runway infrastructure and closure of runway are not required for installation and maintenance.

Superior performance

It is the only system capable of full HD coloured images in both daytime and low-light conditions. Camera technology allows for extension of functions into wildlife detection, airfield monitoring and surveillance.

Ease of maintenance

EOs are installed away from the runway, making iFerret™ 2.0 easy to maintain. Runway remains open during maintenance, and the lower number of hardware units reduces maintenance intensity.



strategic locations

Minimal hardware

12 EO sensors cover a 4km runway. Underground cabling connects to the iFerret™ 2.0 system.

Instant operator access

Instant operator access to visuals and FOD alerts both on workstation and mobile device.



Built-in coverage redundancy

Ensure 100% system operability.

