

DIRECT ANSWER

A runway surface scan images the full width of a runway, taxiway or apron at a ground resolution computed from the camera and the flight height, so that every crack, spall, joint defect and debris item is found and located. TarmacView flies the scan by drone and returns the located findings and the imagery the same day.

● ● ○ ○ PAVEMENT SURFACE · ICAO ANNEX 14

The whole runway surface, at a resolution you can measure from

Pavement fails slowly and then all at once. A low serpentine pass images the full width of a runway or taxiway at a known ground resolution, so cracks, spalls, joint breakdown and debris are found and located while they are still maintenance rather than a closure.

[Scope a surface scan](#)

[How the visit works](#)

10 m AGL scan altitude above the pavement	20–80% overlap, side and forward
1 pass covers the full surface width	RTK ±1 cm every image georeferenced

FIT

Who this is for

This service is bought by the person who walks the runway and knows what a walk misses. It fits the maintenance manager who wants every crack and every spall at a position a crew can drive to, the engineer measuring the extent of a resealing or a rubber removal before the tender goes out, and the operator who needs a record of the surface on a date, before works, after works or after an incident.

FOR

- ✓ Aerodrome maintenance managers who want to know where the surface is breaking up before the next walk-down finds it, and want each finding at a position a crew can drive to.
- ✓ Airport engineers preparing a resurfacing, a joint resealing or a rubber removal who need the extent of the work measured rather than paced out.

- ✓ Operators who need a documented record of the pavement surface at a date, before or after works, a handover or an incident.

NOT FOR

- × A condition rating per section or a repair priority list, which the pavement condition assessment produces from this scan and which is scoped as that service.
- × Structural capacity, bearing strength or subsurface voids, which need load testing, coring or ground penetrating radar rather than imagery.
- × Friction and texture measurement, which is a separate instrument and a separate visit.

JUDGED ON DELIVERY

Outcomes and acceptance criteria

Three outcomes are what the service is judged on, and each has a state you can check on delivery rather than a promise you have to trust.

01

02

Every visible finding, located

Each crack, spall, joint defect, patch, area of loss and piece of debris on the scanned surface comes back with its type, its extent, its surveyed position and the image it was found in, so a crew can go to it rather than look for it.

ACCEPTANCE

Pick any finding, and its position, its extent and the frame it came from are there.

Imagery at a resolution that was computed, not hoped for

The surface is imaged at the ground resolution the scope note names, with the overlap it names, from a pass whose run count and frame spacing were derived from the camera before the flight.

ACCEPTANCE

The report states the flown resolution, and the imagery bears it out anywhere you look.

03

A record the next scan can be compared against

Findings are positioned to RTK precision and the imagery is georeferenced, so a repeat scan of the same area reports what grew, what appeared and what was repaired rather than a fresh list.

ACCEPTANCE

A finding from this scan can be found again in the next one by its position.

What the service does not undertake to produce is a condition rating or a repair priority. That is the [pavement condition assessment](#) , which takes this scan's inventory, divides the pavement into agreed sections and rates each one against ASTM D6433 categories. It is the right purchase when the question is which sections get money this year. The scan is the right purchase when the question is where the surface is breaking up and what it looks like.

Coverage that is calculated, not estimated

A pavement scan is only worth as much as its worst-covered strip. So the pass is derived from the camera, not from a guess.

The run count comes out of the optics

From the scan altitude, the gimbal angle and your camera's field of view, the per-image ground footprint is computed, and from that the number of parallel runs needed to cover the surface width at the overlap you asked for. Forward spacing between frames comes out of the same footprint. The flight speed is then checked against the

camera frame rate using that spacing, so a high-overlap scan can never be flown too fast to actually capture every frame it plans. Altitude follows the terrain, so the commanded height above the pavement holds even where the surface falls away.

Scan the part you care about

You are not limited to whole surfaces. The along-track window can be capped or trimmed at both ends and measured from either runway end, so re-checking the first 600 metres off one threshold is one setting.

The band across the surface can be narrowed to a single side, which is how a shoulder or one half of a wide apron gets scanned without flying the rest. Runs can be laid along the surface or across it. This pass also satisfies the visual aids requirement to overfly the full length of the runway at low level, so the pavement scan and the pattern and obstruction check come off one sortie.

WHAT COMES BACK

What the report answers

Every finding located on the surface, so the next survey compares against this one rather than starting over.

01 Cracking

Longitudinal, transverse and block cracking located along the surface, with extent and severity recorded per crack.

ASSESSED AGAINST ASTM D5340 (PCI)

02 Spalling and scaling

Surface loss at joints, edges and slab corners, including where aggregate has begun to work loose.

ASSESSED AGAINST ASTM D5340 (PCI)

03 Joint condition

Sealant loss, joint spalling and faulting between slabs, run along the full joint rather than sampled.

ASSESSED AGAINST ICAO Doc 9157 Part 3

04 Foreign object debris

Loose material on the pavement at capture time, with position, so it can be cleared before it is ingested.

ASSESSED AGAINST ICAO Annex 14

05 Rubber and markings

Rubber deposits in the touchdown zone and the condition and contrast of painted markings.

ASSESSED AGAINST ICAO Annex 14

06 Surface drainage

Depressions and ponding evidence where water is standing rather than running off.

ASSESSED AGAINST ICAO Annex 14

07 Obstruction and pattern check

The low-level pass along the full runway also confirms visual contact with the runway elements is not obstructed.

ASSESSED AGAINST Not obstructed

08 Position of every finding

Each finding carries a surveyed position, so change between visits is measured rather than remembered.

ASSESSED AGAINST RTK ± 1 cm

From resolution to located findings

01

Scoping call

You name the surfaces, or the part of a surface, and the question the scan has to answer. We turn the question into a ground resolution and an overlap, agree the export format and who receives the same-day debris notice. Output is a scope note that states the resolution the scan will be flown at.

02

Mission build

The runs are computed from the surface geometry, the resolution and the camera optics: flight height, run count, frame spacing and speed all follow from them. The height profile follows the terrain. Output is a validated mission and a capture window request to your tower.

03

Capture

Flown between aircraft movements, about an hour on site per runway at the default resolution. Every image carries its RTK position. If a movement interrupts a run, the run resumes from where it stopped. If weather closes the window, the mission is reflown unchanged rather than rebuilt.

04

Detection

Imagery goes through the surface analysis pipeline, which finds and classifies distress by type and marks loose material. Every detection is positioned from the image's georeference. Detections below the confidence floor are held for human review rather than dropped silently.

05

Same-day notice

Anything that reads as an immediate operational hazard, debris on a movement area or an open spall in the touchdown zone, is reported on the day of capture with its position. This is the one part of the deliverable that does not wait for processing.

06

Delivery

The located findings, the georeferenced imagery and the report land together in the agreed format. On a repeat scan the report states what grew, what appeared and what was repaired against the previous scan of the same area. Anything disputed is re-examined against the retained imagery rather than re-flown.



CAPTURE • FULL WIDTH • EVERY IMAGE GEOREFERENCED

EVIDENCE AND CAPABILITY

The claim worth checking is the coverage

A surface scan is a claim about coverage before it is a claim about findings. A walk-down covers what the walker looks at. A scan covers what the pass was computed to cover, and the computation is done from the camera's field of view, the flight height and the overlap, so the

ground resolution is a stated figure and the worst-covered strip is as well covered as the best. That is what lets the scan say what is not there as well as what is, which a walk cannot.

The distress families the scan reports are the ones a surface image can carry: cracking in all its orientations, [alligator cracking](#) where it has set in, [raveling](#) and weathering, patching, [spalling](#) and sealant loss at the joints, rubber in the touchdown zone and the state of the markings. Loose material is reported as [foreign object debris](#) rather than as a pavement defect, with a same-day notice, because debris on a movement area is an operational finding with a different owner and a different clock. Where the debris keeps appearing, the spall it came from is usually in the same frame.

What the scan does not do is rate. A [pavement condition index](#) is a statement about a defined section, computed from distress density against [ASTM D6433](#) categories, and that is the pavement condition assessment, which takes this scan's inventory as its input. The scan is the evidence layer under it, and it stands on its own when the question is where and what rather than how bad and in which order.

Every finding carries a position from [RTK positioning](#) , and the imagery is retained. That is what makes a disputed finding checkable and a repeat scan comparable. A crack found this year can be found again next year by its position, and the report says whether it grew. A photograph in a folder with no position cannot be found again at all.

COMPUTED VS WALKED

100 %

of the surface imaged, at one resolution, on every visit

computed

run count and frame spacing, from the optics, before the flight

per finding

a surveyed position and the frame it was found in

HOW THE PRICE IS BUILT

Four things move the quote

There is no published rate for this service, because the work scales with the area and the resolution together, and a figure that is right for one touchdown zone at a coarse resolution is wrong for a whole apron at a fine one.

EUR

PER AERODROME PER SCAN

EXCL. VAT

EU

CHECKED 2026-09-08

Cost driver 01

Area

Capture time and processing both scale with it. A part of a surface costs less than the whole of it.

Cost driver 02

Resolution

A finer resolution means a lower flight, more runs and more images over the same area, and the scope note says by how much.

Cost driver 03

Baseline or repeat

A repeat of a known area reuses the mission and compares directly against the last scan, and costs less than the scan that created it.

Cost driver 04

Travel

Shows up as travel and not as a different scan.

Tell us the aerodrome, the surfaces and the question and you get a figure and a date back. The [pricing page](#) sets out the shape of a visit that combines the pavement with the lighting inspection, which is the cheaper way to buy both.

EACH WITH AN OWNER

Risks and dependencies

Three things can stop or degrade a scan, and each has an owner.

OWNER · WEATHER

Weather and surface state

Standing water, snow cover and heavy contamination hide the surface from a camera, and wind above the

OWNER · OPERATOR

Access

The scan needs tower coordination and, at most aerodromes, an escort, and a low pass along the full runway needs movement

drone's limit stops the low pass. The mission is re flown rather than scanned through the obstruction. This is nobody's fault and it is the most common reason a date moves.

windows long enough to fly a run. If the windows do not appear, the visit does not happen. That dependency sits with the aerodrome operator and it is worth confirming before travel is booked.

OWNER · BOTH, AT SCOPING

The question

A scan flown at the wrong resolution answers the wrong question, and reflying it is a second visit. We turn your question into a resolution at scoping and write it into the scope note, and the report states the resolution that was flown so the two can be compared.

Accountability sits with TarmacView for the coverage, the detection and the positions, and with the aerodrome operator for access, for the same-day action on debris and for what is done with the findings. Nothing on this page is a compliance statement. Whether a given record satisfies a particular authority is a question for that authority.

Frequently Asked Questions

What is the difference between the scan and the pavement condition assessment?

The scan finds and locates. The assessment rates and ranks. This service delivers every visible distress and every piece of debris on the surface, each with a position and the image it was found in, and the imagery itself at a known resolution. The pavement condition assessment takes that inventory, divides the pavement into agreed sections, computes a condition proxy per section against ASTM D6433 categories and orders the sections for repair. If you want a number per section and a list in the order the money should be spent, that is the assessment. If you want to know where the surface is breaking up and see it, that is the scan.

What resolution do you fly at?

The one the question needs. A hairline crack needs a finer ground resolution than a spall or a patch, and the resolution is set by the flight height and the camera, so we compute the height from the resolution you ask for rather than the other way round. The default pass is flown at ten metres above the pavement, which resolves the distress families a surface survey reports. Where you need finer, the scan is flown lower, which means more runs and more images, and the scope note says so before the flight.

How long does the aerodrome have to give us?

The capture window, and nothing else. The scan is flown between aircraft movements in coordination with the tower, and the drone clears the runway when asked. Budget about an hour on site per runway at the default resolution, with taxiways and aprons added in proportion to their area. The runs are laid out so that an interrupted run is reflown from where it stopped rather than restarted. Processing and the report happen afterwards, off site.

How is coverage guaranteed?

By computing it before the flight instead of checking it after. From the flight height, the gimbal angle and the camera's field of view, the footprint of one image on the pavement is known. From that footprint and the overlap you asked for, the number of parallel runs across the surface width and the spacing between frames along each run follow, and the flight speed is checked against the camera's frame rate so that every planned frame is actually captured. The height follows the terrain, so the resolution holds where the surface falls away. The result is that the worst-covered strip of the surface is covered as well as the best.

What do you do about debris found on the surface?

Report it on the day of capture, with its position, before the report. Loose material on a movement area is an operational hazard rather than a pavement defect, and the aerodrome will want it cleared before the next movement rather than listed in a document that arrives later. The report still records it, with the image, because where debris keeps appearing is often the spall or the joint it came from, and that is a maintenance finding.

Can you scan only part of a surface?

Yes, and it is often the right purchase. The along-track window can be capped or trimmed at either end and measured from either runway end, so re-checking the first six hundred metres off one threshold is one setting. The band across the surface can be narrowed to one side, which is how a shoulder or half of a wide apron gets scanned without flying the rest. Runs can be laid along the surface or across it. A repeat scan of a known problem area is cheaper than a baseline of the whole surface, and it produces a direct comparison with the last scan of the same area.

What do we get, in what format?

The located findings as a table and as a layer you can open over the surface, each finding with its type, its extent, its position and the image it was found in. The imagery at the flown resolution, georeferenced. And a short report that says what was flown, at what resolution, and what was found. Export formats are agreed at scoping, because the receiving system decides the format rather than we do. Retained imagery is kept so that a disputed finding can be re-examined against the frames rather than re-flown.

References

- | | |
|---------------------------------|--|
| <code>icao-annex-14-v1</code> | Annex 14 to the Convention on International Civil Aviation, Volume I: Aerodrome Design and Operations
International Civil Aviation Organization |
| <code>icao-doc-9137-p9</code> | Doc 9137, Airport Services Manual, Part 9: Airport Maintenance Practices
International Civil Aviation Organization |
| <code>astm-d5340</code> | ASTM D5340-20, Standard Test Method for Airport Pavement Condition Index Surveys (https://www.astm.org/d5340-20.html)
ASTM International |
| <code>faa-ac-150-5210-24</code> | AC 150/5210-24, Airport Foreign Object Debris (FOD) Management
(https://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentnumber/150_5210-24)
Federal Aviation Administration |
| <code>tarmacview-pricing</code> | Pricing: one visit, every light and every surface
(https://www.tarmacview.com/pricing/)
TarmacView |

